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AUTHOR	Taylor, William
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ABSTRACT

This report is intended to stimulate discussion among and within the 18 countries comprising the Organisation for Economic Co-operation and Development (OECD) about recent, current and future changes in the role and functions of their universities. Of particular concern are difficulties associated with preparing, legislating, and implementing policy. Ten main functions that universities fulfill in OECD countries are identified, based on mission statements. The influence of economic, social, and political factors on the roles of universities is also addressed. To clarify current problems of universities in OECD countries, the way the higher education system came into being, particularly since 1960, is discussed, along with the development of nonuniversity higher education during these decades. Additional issues considered include: access and participation in higher education, the age and sex of students, part-time enrollments, undergraduate and postgraduate curricula, nontraditional curricula, the research role of universities and external and industrial support for research, universities and the economy, the age structure of the academic profession, tenure and conditions of service for faculty, quality in higher education, and tasks for the future. (SW)

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Pursuant to article 1 of the Convention signed in Paris on 14th December, 1960, and which came into force on 30th September, 1961, the Organisation for Economic Co-operation and Development (OECD) shall promote policies designed:

- to achieve the highest sustainable economic growth and employment and a rising standard of living in Member countries, while maintaining financial stability, and thus to contribute to the development of the world economy;
- to contribute to sound economic expansion in Member as well as non-member countries in the process of economic development; and
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This report has its origin in the recommendations of the OECD Intergovernmental Conference on Policies for Higher Education in the 1980s (OECD, 1983) which called for a reappraisal of the special position of the university within the total system of higher education.

Such a reappraisal was felt to be necessary for a number of reasons which are discussed in the various chapters of this study. Above all, there is a pervasive feeling that the current problems and those likely to afflict higher education systems in the years to come are not merely related to questions of resources, numbers, low efficiency or to mismatches between supply and demand of graduates. They do pose a more fundamental question concerning the very purposes and functions of higher education institutions in post-industrialised societies. Moreover, within systems of higher education, the universities remain the pre-eminent institutions, the pace-setters of academic standards, excellence and innovation, and as a consequence a source of emulation for other institutions. Desirable changes in higher education cannot be easily conceived and implemented if the university continues to remain aloof, sacrosanct and immune to the mounting pressures of the changing world around it.

The focus of the report is thus on the universities seen as institutions with distinctive roles and missions, but operating within diversified and enlarged systems of higher education. It has been written by Professor William Taylor, Vice-Chancellor of Hull University, United Kingdom, working closely with the Secretariat and drawing heavilly on a series of country reports prepared by national authorities listed in the appendix.

The main findings and policy implications are included in the final chapter, written by the Secretariat.

The report is published on the responsibility of the Secretary-General of the OECD.

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Chapter 1

THE POLICY CONTEXT

Universities under Examination

The purpose of this report is to stimulate discussion among and within the OECD countries about recent, current and likely future changes in the role and functions of their universities. The 1981 OECD Intergovernmental Conference on Policies for Higher Education in the 1980s concluded:

> "It was clear throughout the discussions in the Conference that the crisis of higher education is not merely one of public confidence vis-à-vis the performance of higher education; it is also, and perhaps more fundamentally, an internal crisis of purpose, that is, one which touches on the very nature of individual institutions, their roles and functions and their place in the total higher education system. In this, a reappraisal of the special position of the university appeared as crucial." (OECD, 1983, p.55).

The historical, legislative, social and administrative differences between university systems within the OECD are profound.

- Some Member countries have evolved a broad basis of access, in which universities enrol a high proportion of all students in higher education. Elsewhere, this proportion has decreased over the years whereas growing numbers enrol in non-university colleges or post-secondary technical institutions;
- Some countries have large sectors of higher education with restricted entry. In others, open access to all those who graduate from secondary school remains the prevailing policy;
- Significant variations among countries exist in terms of the degree and types of hierarchies among universities and/or departments;
- Drop-out rates are high in some systems, low in others;
- Some universities are financed by state or by regional governments on the block grant principle and enjoy a large measure of financial autonomy – with its attendant responsibilities. In other systems most of the operating budget remains under government control;
- There is great diversity within the OECD community in the nature and title of the academic awards earned by those who successfully complete university studies;
- In many European countries and in national universities in Japan, academic staff are civil servants. In English-speaking countries they are for the most part appointed and employed by the Councils of their own institutions;
- Some undergraduate curricula are general. Others are highly specialised. There are great differences in staff/student ratios and patterns of instruction;
- The average time to complete a degree in some countries is twice as long as in others.

Despite these differences, universities in OECD countries today confront common problems which derive from a single central fact: they are being called upon to play an ever-more important part in the restructuring and growth of increasingly knowledge-based national economies, at the same time as they are under pressure from cuts in public spending, demographic downturn, diminished legitimacy, and the consequences of rapid growth in the 1960s and early 1970s, including, in some cases, distorted age profiles of academic staff (OECD, 1983).

All this poses severe problems for policy-makers and institutions alike. Innovation and adaptation to new tasks on the part of what are, *de jure* or *de facto*, largely self-governing institutions are facilitated by conditions of growth and the availability of additional funds. When growth is absent and money short, collegially-governed universities do not always find it easy to reallocate resources internally, particularly in ways that coincide with official priorities. Governments and funding bodies react by distributing money in a more selective and targeted manner, but are not always in a position to calculate the long-term effects this may have on institutional response and the capacity of the academic system for self-regulation. A wish to maximise income from private sources in order to overcome short-run funding crises may, for example, tip the balance of research effort too much in the direction of applied work and routine testing. Too ready a willingness to adopt the scientific and technological "flavour of the month" may inhibit ability to identify new and currently unfashionable possibilities. Reduced funding and worsening staff/student ratios in the humanities and social sciences may limit the contribution that these disciplines can make to social and political modernisation and to the extension of educational opportunities to a non-traditional clientele. In these circumstances, "buffer organisations" (Thacker, 1983) set up to mediate relations between the universities may become less effective.

Whilst problems of this kind affect to a varying extent all the institutions that make up the higher education systems of OECD countries, the universities are particularly at risk. High-status professional, technological and research institutions such as the *Grandes Ecoles* and the elite universities found in the Carnegie Foundation's "Research Universities I" category (U.S. country statement, p.17), especially those privately funded or with large ancient endowments, are to a certain extent protected from current financial exigencies and confusions as to role. So are many of the recently-created Polytechnics, *Fachhochschulen*, Regional Colleges and other non-university institutions that focus on vocational and technological provision. These institutions are by no means free of the problems that afflict state-funded, multi-faculty universities. But they generally have a more readily legitimised identity and mission, fewer difficulties of internal governance, and a capacity to attract students and support that is less likely to be eroded by demographic and fiscal downturn.

It is for these reasons that the focus of this report is on universities, rather than on higher education systems. The place of universities within such systems is discussed in Chapter 3, and there are frequent references throughout the report to other higher education institutions; but the intention is to direct attention and discussion to the particular difficulties today associated with preparing, legislating and implementing policies that bear upon the present situation and future prospects of the majority of university institutions in OECD countries.

The scale and organisation of higher education in most OECD countries today reflects rapid expansion during the sixties and, in some cases, the early seventies, the character of which was influenced by the interaction of strong and deeply-rooted traditional conceptions of university education and a complex variety of innovative educational and organisational responses to contemporary conditions.

Two particular features of the economic context of higher education growth in the sixties stand out. First, the growing affluence of many developed countries fuelled an explosion of expectations, especially on the part of a generation that had not experienced the economic

depression of the thirties or the deprivations of war. Second, such affluence itself came to depend increasingly on the application of science and technology to production and to the provision of services, and generated urgent manpower requirements of a kind with which existing higher education structures were not well adapted to deal.

The pent-up character of some of the forces to which the expansion of higher education was a response gave the process tremendous momentum. Existing structures were stretched in trying to keep up. To take a single example, large numbers of additional academic and support staff had to be recruited from relatively small specialist cohorts, the members of which were in any case already in demand from industry and the public service. The educational ideas-base of some of the new structures created to take the load had only shallow or ephemeral roots. If new structures were to evolve a clear and respected mission, strong enough to stand alongside traditional forms, an extended period of well-resourced consolidation was needed.

This was not to be. High expectations and corresponding social trends spawned by affluence – democratisation, participation, open access, egalitarianism – clashed in the early 1970s with the effects of the "oil shocks" on the economies of the industrial nations of the West. The seeming inability of many governments to control the resulting high levels of inflation and unemployment gave rise to fears about continued economic advance, and the viability of democratic political institutions. The resurgence of nationalistic and fundamentalist beliefs among small but sometimes influential minority groups in many countries is only the most striking and visible manifestation of a renewed concern with the moral and socialising functions performed by education in general, and by higher education institutions in particular.

This period of economic depression and pressure on resources in many of the older industrial countries coincided with the rise of competition for markets from Japan and the new industrial nations of the Far East. Such competition was increasingly based on the development of technologies that had emerged during the fifties and sixties. The application of these technologies in countries with low overall economic growth was seen to exacerbate, at least in the short run, problems of unemployment that accompanied recession. Within the overall trend of diminished employment opportunities, those with least education faced particular difficulties. Higher education graduates were obliged to accept work at levels of responsibility, autonomy, status, security and reward below those to which their predecessors had grown accustomed. In so doing, they squeezed out less well qualified candidates. At the base of the social pyramid, signs began to appear of the development of an "underclass", dependent upon state benefits, and with little prospects of continuous full-time employment. Elements within this underclass were particularly susceptible to the appeal of extreme ideologies, of both left and right, and presented new problems of social control. Such problems have been particularly marked in older industrial areas based on primary production. Within some countries, long-standing regional differences in prosperity, morale, individual life-chances – even in health and mortality – have become more marked with the decline of traditional industries and the concentration of "sunrise" technologies and activities on favoured areas.

To establish priorities and resource dispositions that would ensure long-run economic survival, whilst at the same time continuing to maintain control over inflation, has in several countries been seen to demand strong central leadership, inconsistent in certain respects with the more open and participative social and political forms favoured two decades earlier. In democratic ideology and rhetoric (although not yet everywhere in reality) achievement has replaced ascription as the basis for social reward and esteem. A decline in traditional forms of authority has put greater emphasis on formal contract and legal process. There is less trust in the disinterestedness and expertise of professionals. Intergroup relations have become increasingly bureaucratised and subject to formal accountability procedures.

Meanwhile, science and scholarship have continued their advance. Discoveries in fields such as genetics, opto-electronics, high-energy physics, material science, biochemistry – to name but a few – have led to a proliferation of demands for the support of multidisciplinary research efforts, and to new links between academic researchers and those who wish to exploit and to apply their findings in production, defence, medical practice and public service. The effect of the "sophistication factor", the greater complexity of research designs, the variety of experts now involved, and the intrinsic scale of some fundamental research all put pressure on available resources and require more stringent evaluation of proposals, progress and outcomes.

The Impact of the Changing Employment Situation

There was a time when the separation between education and work caused few conceptual and definitional problems. Education took place in schools and colleges and universities. Work was done in fields and factories and offices. The one preceded and, directly or indirectly, was a preparation for the other. Important elements of these distinctions remain. But commonly-understood boundaries between education and work have been broken in several places.

Education is no longer simply identified with schooling: a particular process undertaken in a particular institutional setting during a particular period of life. If we leave aside the analytically useless sense in which *any* experience can be regarded as "educational", and disregard the arguments of those who would draw a clear and significant distinction between education and training, we are left with a vast number of more or less formal "educational" activities that go on outside and beyond the school and higher education. With this goes a growing pressure towards concepts of lifelong education, recurrent education and *éducation permanente*, the rallying cries over the years of much educational discourse sponsored by international organisations. We also have a considerable literature which examines and aligns the values and practices of school and of workplace, which stresses the *correspondence* between the skills and dispositions that each requires within the social and economic structures in which they coexist.

Efforts to refine the concept of *work* abound. Historical analysis highlights the temporality and distinctiveness of definitions based upon largely industrial models (Anthony, 1977). Some authors, aided and abetted by those who fear the consequences of microelectronics on the job market, argue for a further distinction between *work* and *employment*. We all need work; we may not all be able to have continuous employment.

Not only conceptually, but also practically, the boundaries are less clear than once they were. Some courses of higher education are organised on the sandwich principle, with a period of paid employment seen as an integral part of the educational programme. Work experience has been introduced into secondary education. Paid educational leave for workers is a legal right in several European countries. And the leaders of nations undergoing revolutionary change give high priority to reassessing the relations of education and work, sometimes to the point of seeking to destroy the institutional frameworks within which they have been carried out in pre-revolutionary conditions.

Boundaries are also being eroded elsewhere. While the bulk of existing higher education provision falls within the welfare function of governments and is financed through the tax system, there is also in nearly all countries a "private" sector of education, both general and vocational, subject to the market. In many countries, a high proportion of university graduates have hitherto been employed in a variety of public service occupations, including

the education system itself. This proportion is now falling, and there is greater encouragement for students to look for jobs with private industry, with as yet largely unrealised consequences for curriculum and "formation".

Most people continue to make a common-sense separation between activities and processes that are primarily educative in design and intent and those which are primarily productive. Work is still generally defined in terms of job and employment, distinguished by time and space constraints and structures of reward from non-work and leisure. Despite the reforming intentions of many of those who discuss the relations between *education and work*, most of the literature on which they draw is in fact about the relations between *schooling and employment*.

There are also differences between the organisation and imperatives of the education and work systems, to which the OECD (1977*b*) has drawn attention:

> ".. these systems have quite different structures, function differently, and are affected by policies formulated through different processes. Education is predominantly a public service, created and made available through large administrative systems in which policy is implemented by the public authorities in the light of broad political judgements and decisions reflecting the needs and wishes of the community and electorate. In contrast, working life has its place within economies that combine in varying degrees the management and free operation of the market for goods and services, in which employment is heavily dependent on production and investment and on decisions by enterprises and workers' organisations that may be outside the scope of public policy. An awareness of the extent to which education and working life operate within different systems therefore becomes particularly important when considering co-ordination not only among government departments and among the various levels of government, but also between the policies of governments and those of enterprises and workers' representatives" (p.53).

Thus, whilst *policies* are now oriented firmly towards closing the gaps between education and work, towards modifying individual consciousness of the differences between them, towards making higher education "relevant" to adult life, and work experience "educative" rather than alienating and degrading, the *conceptual and organisational* apparatus with which we work still emphasizes the separation of the two spheres. This is a state of affairs which makes for real difficulty in discussing some of the problems that at present face governments and decision-makers.

The Socialising Functions of Work

Given the survival of the main features of our present system of production and exchange, structural unemployment and problems of job displacement may have to be lived with for a long time. Particularly interesting to the educator is how a reassessment of the value of work, and of beliefs and identities based upon this value can be incorporated into curriculum and organisation *without* undermining those socialisation processes that will remain essential if men and women are to acquire and practise responsible attitudes and behaviour.

Educators have found it easy to argue for a revaluation of leisure, the delights of freedom from the rat-race of nine-to-five employment and careers, the beauties of a simpler, more self-sufficient pastoral life style. The kind of microchip and robotised world that will permit shorter working hours, "recurrency" between work, leisure and education, mid-life retirement, and long-term sabbaticals, is looked to as a means of generating such economic surpluses as to ensure plenty to go round, even for those who, by inclination or lack of opportunity, are unable to make a direct economic contribution.

But the relationship between technological innovation and economic growth is not simple. There is argument about the limitations that will be enforced by resource depletion and pollution, and about the possible consequences of rigidities in international trade and the effects of regional and even global conflict. Failure to sustain a growth rate commensurate with scenarios of a rich and leisured world on which some educators' remedies depend is already a present reality. It is argued by some economists that growth rates needed to enable Welfare States of the Western kind to be run without producing unmanageable inflation or social strains cannot be sustained in the long term.

For some radical groups, it has been tempting to embrace the image of a society in which economic considerations take second place to quality of life, to civilized cultural styles, to the conservation of urban and rural environments, and to the promotion of greater equity and social justice. Such nostalgic images pay little attention to the realities of international economic competition, which have been of increasing importance in shaping the agendas of policy-makers.

"Deindustrialisation" is not an option for most countries – not, that is, if current and likely future levels of social and personal expectation are to be met. Monetarist economists suggest that the growth of public-sector service employment, in addition to being inflationary in its consequences, has deprived manufacturing industry of labour and diminished incentives for adequate capital investment. Such views are contested, but there seems little disagreement that many OECD countries have seriously under-invested in new technology and in the nurturing and development of skills and dispositions appropriate to successful industrial competition. These include mobility of a kind that will counter the serious *job-displacement* effects of high technology, which are likely to be more serious than overall effects on net employment.

There are some obvious tasks for educators here, such as ensuring that a larger proportion of the population understands and appreciates the nature of the dilemma that the developed nations face, and organising courses and training relevant to new technologies. But there are deeper and more worrying problems about how values appropriate to a more just and effective economic order can be consistent with those that serve the interests of individual nation states, and the extent to which, through educational efforts, the crisis of entitlements seen by some as a source of much of our present discontents can be defused.

The establishment of clear one-to-one relations between particular kinds of educational input and subsequent gains in worker satisfaction and personal fulfilment is clearly impossible. Most of those involved in education, at every level from the elementary school to the university, share the faith that the more literate, numerate and socially aware the student, the wider the range of personal, social and occupational skills at his or her command, the greater his or her confidence and capacity for coping with adversity, then the easier it is to secure a sure foothold in the world of work, to derive something of value from work experience and to render better service to family and fellows. Universities cannot predict the future circumstances of their students, nor control the extent to which external circumstances and chance will determine occupational opportunities and destinations. Such uncertainties have been used to help justify a general rather than a vocational education, a broad preparation for a variety of unpredictable subsequent conditions, rather than specific training for a task that in five, ten or twenty years may no longer exist. Within recent years, however, problems of unemployment, complaints by both employers and employees about the "irrelevance" of much higher education to subsequent adult experience, and a desire to minimise the disaffection of youth from education have combined to encourage interest in the identification of the skills and competences of working life which might now be used as a basis for an educational programme that is *both* general and vocational in character. "Education will be completely general only when it includes preparation for life at work as an inseparable part of preparation for adult life". (OECD, 1977 *b*).

Chapter 2

MISSIONS AND AGENDAS

Continuity and Change

Over the centuries the university has proved its resilience as an institution. Economic, social and political organisations have come and gone. Some that have survived have changed utterly in function, role and structure. Yet even in the newest, poorest and smallest of the universities of the modern world, there survive missions, ideas, values, conventions and practices which link the lives of staff and students to those of their thirteenth century predecessors in Paris, Oxford and Bologna.

These are not simply the visible trappings of academic dress and ceremonial observance, for there are highly-developed university systems in which such symbols are now almost invisible. Nor is continuity provided by commitment to scholarship in the humanities, for there are whole universities now dedicated almost exclusively to research and teaching in technological subjects. Nor is it the existence of a residential community. In most universities the vast majority of students commute daily to their studies from parental homes or uncontrolled lodgings.

What, then, is the nature of the thread that binds past and present and gives a distinctive character to the fabric of university life among the furnishings of contemporary higher education? There are several strands.

Whilst for the medieval university the pursuit of truth had more to do with scriptural exegesis than scientific discovery, such pursuit retains its importance as the central justification for the existence of institutions devoted to the life of the mind. Whilst for most people, most of the time, the life of the mind is merely instrumental to the business of making and exchanging, getting and spending, a society without institutions devoted to that life is today likely to be impoverished not only in the sight of God, but also that of man. In the words of Jaspers (1960), the university is "the corporate realisation of man's basic determination to know". In societies in which order and security are increasingly dependent upon economic success, the terms "academic" and "otherworldly" have acquired pejorative associations. Yet, it is still widely recognised that to preserve the best that has been thought and written requires specialised institutions and specialised personnel, undistracted as far as possible by routine concerns. Such institutions and people also furnish the pedagogic framework by means of which new generations of citizens can be inducted into their cultural inheritance – especially those who will assume responsibility for its continuation and development. These three strands – the pursuit of truth, the preservation of culture, and the induction of the young – contribute to the strength of the thread that links the complex life of modern universities to that of their medieval forebears.

Over the centuries the complaint has often been made that the single-minded pursuit of truth gives too little weight to contemporary realities. Sometimes grudgingly and erratically,

the State has for the most part accorded the university a measure of freedom and independence from the full rigour of the orthodoxies that religious, social and political order demands from men and women in the wider world. The price for the university has been a willingness to respect the limits of its role, to refrain from direct intervention in the political sphere, to accept willingly its status as an "ivory tower". In a world in which knowledge plays an increasingly important role, the ability and disposition of the State on the one hand to protect the university, and the willingness of staff and students on the other to keep their distance, both come under pressure (Bok, 1982).

Another connection with the past is a pattern of internal government that recognises the separation of the different forms of knowledge that universities strive to preserve, to add to and to transmit, and the inappropriateness of contemporary industrial and bureaucratic metaphors – "output", "product", "efficiency" – to describe what they do. Collegial government, the initiation of action within units and departments, the relative weaknesses of central direction, however inconvenient they may be to policy-makers and administrators of a rationalising tendency, reflect the essential character of universities' academic mission and purpose.

In all these respects, the universities of each OECD country share an inheritance of many centuries. The university has survived revolution and war, religious and political persecution, poverty and neglect. It has even survived the changes of the past twenty years, perhaps the most radical since the Enlightenment, in which the numbers of universities, of staff and of students have been doubled and redoubled, the work that universities undertake has been extended into a multitude of new fields, and the responsibilities of universities in basic and applied research have been reflected in the availability of vast sums of public and private money.

A Plurality of Missions

The catholicity of a university's missions, the variety of roles that it performs, the many different functions that it serves, contribute both to its capacity to survive and to the problems it encounters in a world in which the clear definition of tasks, and the evaluation of performance in their achievement, is an increasingly common condition for public and political support. Against the view that universities have lost their way, that their principles have become submerged in an inchoate mass of different and conflicting responsibilities (e.g. Annan, 1970; Nisbet, 1971) it is argued that essential elements of university life – respect for scholarship and research productivity, commitment to truth, faith in reason, the rejection of irrelevant forms of discrimination, freedom of expression – are, as a result of expansion and democratisation, now much more widely diffused in the population at large, and are retained as core values in the life and work of even the smallest and least prestigious universities.

Although there may be enduring elements in the concept of the university which, despite all the differences between and within national systems, still have meaning for staff and for students and continue to be reflected in arrangements for research and teaching, useful judgements about the nature and extent of alleged "crisis" may be inhibited by giving too much weight to common elements that transcend frontiers and link past with present. As Ernest Lynton (1984) has suggested, despite the "remarkable homogeneity of values and priorities" which characterise universities, these are "internally generated and do not reflect external – or even internal – realities". The extent of differences between universities – in intellectual quality, motivation and aspirations of their intakes; the qualifications and achievement of staff; the range of subjects offered; levels of research activity; success in obtaining external support; the types of employment to which graduates go, and the impact

on science and scholarship of the work that they and their teachers do – are everywhere considerable *within* national systems, particularly so in countries where the university is the principal provider of post-secondary education.

Where the number of universities remains relatively small and students enter and progress on a highly selective basis, differences between universities within national systems can be much less marked. Even so, there is usually a very clearly defined ranking of subject status, and a less clear but usually significant overall institutional rank which combines, not always accurately or in a way that reflects current realities, judgements along a number of interrelated dimensions.

In the United States, the university system comprises a large number of institutions, spread over considerable distances. Many serve a local role, and receive a substantial proportion of their financial support from private and regional sources and not just from central government. Staff are employed by their own institutions and paid on locally negotiated scales. In these circumstances, there is less a crisis of *the* university, than in other, more centralised and homogeneous systems. Economic downturn, demographic decline, pressures on public spending, the costs of "big science", and the consequences in terms of the age and ability of staff of the massive expansion of the sixties and early seventies, create problems for decision-makers and administrators in some countries such as may well create a crisis for *some* universities.

Governments and industry on the one side, and university authorities and academics on the other, have rather different perceptions about the relations of intellectual work, social change and economic growth. Even when they share a commitment to such growth, to the greater use of advanced technology, to the need for universities to make a bigger contribution to current manpower needs, they differ as to how these commitments are best served. Academics stress the complexity of relations between education and society. They would share Eide's (1984) view that:

> " ... there exists very little real knowledge about the usefulness of the training given today, and even less on what qualifications will be needed in a future characterised by rapid changes in products, technology and forms of organisation. The assumption that a stronger influence by representatives of the economy upon university curricula will make these more relevant from an economic point of view, is based on the pious hope that adding ignorance to ignorance produces wisdom – an assumption hardly substantiated by experience."

For many academics, it is more important to stimulate students' imagination, to increase their motivation for worthwhile forms of success and personal satisfaction, to make them aware of how knowledge and understanding have been added to by the great discoverers and innovators within particular fields, to secure their commitment to accuracy, care of expression, meticulousness in experimental design, caution in the drawing of conclusions, to develop sound judgement; and to do all these things as much *through* subjects, as *in* subjects.

Academic specialists recognise that the majority of their students will not pursue history, or physics, or classical archaeology, or French *as such* in their subsequent careers. They may not even "use" these subjects in any direct way. Yet in recognising this, lecturers and professors persist in their belief that students well taught in a particular discipline can by this means be "educated" in the original liberal/general sense of this term. Musgrove (1978) has argued that a greater stress on the direct usefulness of skills and knowledge serves to *domesticate* the university. In contrast, the great tradition has been "about personal growth and development through access to other significant forms of thought and feeling; it has been about breaking the stranglehold of the present on the mind. Domestication intensifies it".

For some administrators and policy-makers such arguments are little more than a self-interested defence of privilege on behalf of second-rank academics who will not themselves

make a significant addition to knowledge and of second-rate students who would benefit themselves and society more by a focus on directly useful capabilities than by status-conscious dedication to academic disciplines. Governments in OECD countries are increasingly of a mind to remind universities, in the words of Adam Smith (quoted in Price, 1985):

> "We are not born in heaven but in the world, where our being is to be preserved with meat, drink and clothing and other necessaries that are not born with us, but must be got and kept with forecast, care and labour, and therefore we cannot be devotion, all praises and hallelujahs, and perpetually in the vision of things above".

It is as easy, and as dangerous, for academics to dismiss the views of governments and administrators on these matters as short-sighted political populism and bureaucratic expediency, as it is for policy-makers and office-holders to assume that university opinion is over-influenced by romantic, idealistic, self-interested – or even subversive – ideas.

Contemporary Roles and Functions of Universities

These utilitarian emphases on the university's role come through strongly in the country statements, mixed with a continuing emphasis on traditional academic values. For purposes of discussion and further analysis, it may be useful to identify ten principal functions that these statements suggest universities fulfil today in OECD countries.

Universities are first and foremost expected to provide *general, post-secondary education*, of a kind that will challenge and develop the capacities of the ablest groups of school-leavers, and, in some countries, through extra-mural and continuing education provision, of adults. Important though this function is recognised to be, there is a widespread sense of it having suffered as a consequence of specialisation, a stronger emphasis on research, departmental autonomy, and lack of interest in the curriculum of higher education. Senior academics attach highest priority to their research and graduate courses. First-cycle undergraduate programmes have in some places become the responsibility of junior staff, many on temporary hiring. The argument for "general education through specialisation" is still heard, but is undermined by orientation of many specialist majors towards subsequent graduate work and research. At the same time, evidence is available to the effect that outside a fairly narrow range of vocational programmes and curricula, amounting to perhaps one third of a university's total offering, there is no specific market for most arts and science degrees. Such graduates are employed on the basis that their three or four years of systematic study will have identified and made manifest their potential, taught them how to learn, instilled positive habits of mind and a capacity to apply themselves usefully to a wide range of occupational roles. In other words, however specific their education has been in terms of discipline, it is their general qualities of mind, personality and disposition that are valued.

Next in order of current concern is the *pursuit of research and scholarship*, usually with an emphasis of value, if not of practice, on basic or curiosity-oriented research, rather than applied and contract work, an increasing proportion of which is now being undertaken by universities. The proportion of countries' basic research for which universities are responsible varies quite markedly within the OECD community. In most countries, universities, as distinct from polytechnics, *Fachhochschulen*, and other technical post-secondary institutions are provided with resources necessary to the performance of a research role. Although some research goes on in other institutions of higher education, it is generally speaking on a modest scale, and depends on additional rather than base line funding. The number of independent research institutes not directly linked to universities varies markedly from country to country, with a high proportion in France and Germany, a much more modest number in the United Kingdom.

It is widely believed in many countries, although hard evidence is difficult to come by, that research and scholarship *need* to go on alongside undergraduate and post-graduate teaching, that where there is active research, the student (to use nineteenth century imagery) drinks at a running stream rather than a stagnant pond, and that research itself benefits from the stimulus that teaching provides. Where resources are short, and it is necessary to relate their distribution to the quality and output of institutions, even stronger emphasis is placed on research as an output indicator, as being more reliable than judgements about quality of teaching and of service.

A third function of universities is *to assist in fulfilling the manpower needs of the "expert society"*. The professional formation of medical doctors, dentists, veterinaries, teachers, lawyers, priests, engineers, computer scientists, economists and administrators, all form an important part of the work of universities in most countries. With the growth of knowledge relevant to the practice of these and other professions, universities are now also extensively engaged in a variety of forms of post-experience vocational education, through one-year masters' courses, the provision of opportunities for doctoral study, refresher courses and specific training in particular branches of professional practice, and out-reach, on-site, courses and events.

Fourth, and connected with the last function, is the provision of *high-level specialised education and training*, customarily offered at post-graduate level, for future members of the academic profession, for members of occupations the early formation of whom may take place in non-university institutions, e.g. primary teachers, and in the dissemination of research results which may be of importance to members of many occupational groups.

Fifth, governments and publics increasingly look to universities to assist, through their research, education and training functions in *strengthening the competitive edge of the economy*. They are expected to encourage innovation, to show how research results can be applied and yield a useful return, to point to where resources should be directed if productivity and economic performance are to be improved.

Potentially, and sometimes actually, there are clashes between the national interest, so defined, and the universality and internationalism characteristic of many disciplines and professional fields. Academics, having established their personal claim to a particular discovery or invention, are ready to share it with colleagues both at home and abroad. Their country, sometimes even their own institution, might benefit from early patenting and the subsequent payment of royalties. Academic and economic imperatives by no means always point in the same direction.

A focus on economic advantage has in many countries helped to stress the importance of engineering, technology and other fields of study clearly linked to "wealth production". It has also encouraged links between universities, industry and commerce, and a flow of funds into applied research and development, of a kind that at one time universities might have wished to avoid in favour of "no-strings" government support and grants for curiosity-oriented work.

Sixth, despite a trend in recent years to open admissions to adult students, and of the application of "valued-added" notions to evaluation (Boyer, 1985*b*), universities, by careful selection of suitable candidates, and/or through frequent testing and elimination during courses, and by stringent final examinations and assessments, act as *screening mechanisms* for those who will subsequently seek high-level employment in the public service, in industry, commerce, and a great variety of professions. In some systems, the screening process takes place before entry upon a university course, in others during its early stages. The credential eventually awarded is meant to signify the achievement of appropriate standards of knowledge and performance. Whilst there is considerable variation among OECD countries in the proportion of the age group that enters university studies, the differences in the proportions that eventually graduate are much smaller.

Seventh, linked to this screening and credentialling function, is that of providing an avenue of *social mobility* for the able sons and daughters of working-class families, and the provision of grants and scholarships to this end. In many countries this support function has been largely, though not entirely, taken over by the State, which offers means-tested grants and loans to needy students.

Eighth, despite the supra-institutional character of disciplinary imperatives and organisation, universities are expected to offer a variety of *services to their region and immediate community*. Governments have encouraged a distribution of universities right across their respective territories, and have not been averse to founding and supporting universities as a way of stimulating development in less attractive and desirable areas. This generally presents little political difficulty, since the original impetus for founding a university has often been regional or local, a fact reflected in some countries in the continuing basis of financial support, e.g. Germany, the United States.

In countries where universities are organised in formal or informal "tiers", the high-prestige national universities may recruit nationwide, those in the second or third tiers mainly from their own regions and localities. But irrespective of whether they are international, national or regional institutions, universities in many OECD countries are expected to provide such services as the provision of study opportunities for adults in their areas (extra-mural and continuing education); updating courses and programmes for local professional groups; advice and consultancy for local industry; and a variety of ancillary services, such as participation in civic affairs, the provision of halls and meeting rooms, and the maintenance of links with schools and other educational institutions and their neighbourhoods. They also serve an important employment function. It is not unknown for a university to be the largest single employer in its area. In addition to the academic, non-academic and support staff that work on campus, universities provide indirect employment for large numbers of those who furnish accommodation and staff and student services in the locality. The overall economic importance of a university for the area in which it is located is by no means insignificant.

Ninth, universities act as *exemplars of certain national policies*, such as the provision of equal opportunities for women and for racial minorities, the elimination of racism and sexism from courses, and the nurturing of those values which the United Kingdom Robbins Committee (Committee on Higher Education, 1963) saw as being involved in "the transmission of a common culture and common standards of citizenship".

It is not always easy to reconcile such values with academic and disciplinary imperatives. A number of cases have been fought through the courts of OECD countries to establish e.g. whether an unsuccessful candidate for promotion has the right of access to the proceedings of the Committee that rejected her, and whether the admission of a black student with qualifications asserted to be less good than some majority white candidates is lawful. In social systems in which a common adherence to core social values has been weakened, in which more and more issues have in recent years become politicised, and where the practice of single-interest politics is the norm, universities inevitably have difficulty in determining to what extent their procedures and practices are consistent with "the values of society". In this, as in many other respects, there is likely to be a variety of practice and response *within* the university, its faculties and departments, the members of which reflect a broad spectrum of beliefs and political preferences. Yet, universities have never shaken off the influence of their earlier links with the Church and with state religion. Esoteric knowledge retains elements of the sacred, and the practical imperatives associated with its successful pursuit – respect for truth, accuracy, precision, personal dedication, objectivity – retain powerful moral overtones which influence the judgements of academe. Plagiarism is a much more serious matter than adultery, cheating more serious than insobriety, failure to acknowledge the contributions of colleagues more offensive than the most ruthless ambition. Personal qualities and behaviour

may in the modern university take second place to intellect, but intellect has its own moral imperatives, of a kind that are powerfully institutionalised in the practices and conventions of university life.

Tenth, universities prepare men and women for the subsequent performance of *leadership roles* in society, and for occupying positions of influence in public life, in the professions and, increasingly, in industrial and commercial employment. When the proportion of each age group going to universities was smaller than today, and when most OECD countries had virtually full employment, there was a justified expectation on the part of students of employment in a high-status occupation. The initial rank or grade might be modest in itself, and initially attract a low level of reward, but it would carry substantial prospects for advancement.

The last ten years have seen many changes in these respects in many countries. Openings are fewer, numbers of candidates with appropriate qualifications are larger. Although in most countries levels of graduate unemployment are a good deal lower than among 18 year-old or 16 year-old school-leavers and other groups of the population, they are nevertheless substantial compared with the position in the sixties and early seventies. Graduates must often take jobs that fall below their level of personal expectation, which offer limited prospects of advancement and fewer opportunities for the exercise of responsibility and personal autonomy. In some countries, the feeding back of this knowledge into the schools has affected the numbers of young people coming forward for higher education.

Despite the impact of such economic conditions, the fact remains that a high proportion of the leadership roles in society are filled by university graduates and thus the function of universities in preparing the next generation of society's leaders and opinion-formers continues and is unlikely to diminish in importance.

Current Agendas

These ten principal functions are fulfilled by universities in an economic, social and political context that is in many countries radically different from that of ten – even of five – years ago. As a consequence, the agendas of policy-makers, university senates, research funding bodies and faculty associations increasingly feature discussions of issues such as: resource constraints and demographic downturn; the restatement of institutional mission and purpose; the implications of changes in clientele; the reform of the undergraduate curriculum; the organisation and funding of research effort; relations between universities and industry; the future of the academic profession, and improving the quality, efficiency and effectiveness of universities.

University Funding

Pride of place in many current discussions of university futures in OECD countries is given to the effects of resource constraints and demographic decline on funding. The incidence of such problems varies, but few countries are without concerns about the increasing cost of funding university-based research, the distribution of a declining number of candidates between institutions and the need to obtain "value for money" for public expenditure on higher education. A major development since the OECD Intergovernmental Conference on Higher Education in 1981 has been the sharp reduction in several countries in levels of government funding for universities. To take a couple of examples from differently-sized systems, budget allocations for five Danish universities for 1985/86 were 3 per cent lower overall than in the previous year, staff were to be cut by 2.6 per cent, admissions by 6 per cent,

and some institutes and faculties to close (Follett, 1985). In the United Kingdom the 44 universities, after an overall cut of some 15 per cent between 1981 and 1984, were told to expect continuing resource reductions averaging 2 per cent per annum in real terms for the rest of the decade, but distributed according to funding formulae that increasingly discriminate between institutions in relation to research success. Concern over public expenditure in the United States was reflected in the so-called Gramm-Rudman-Hollings Act ("The Balanced Budget and Emergency Deficit Control Act of 1986"), which sought to apply automatic cuts on all, save a small number of specially exempted programmes in the event of Congress and the President being unable to agree upon a budget which meets deficit reduction targets. Whilst the Act did not specifically threaten colleges and universities, there were anxieties in the higher education community that, as in other countries, research and teaching could suffer as a consequence of budget-balancing cuts.

A recent OECD review of educational expenditure shows that, overall, expenditure on higher education is characterised by low or negative rates.

> "...public expenditure on higher education declined in real terms in six countries....despite a corresponding growth in enrolments.... In the remaining countries although the growth rates were positive, they were much lower than the corresponding enrolment growth rates. These developments had two direct results: on the one hand, a strong decline in average real expenditure...under continuously deteriorating resource conditions; on the other, a considerable decline in the relative importance of higher education in total educational expenditure..." (OECD, 1986, p.85)."

Loss of Clarity about Institutional Mission and Purpose

Universities are no longer the only institutions in society centrally concerned with the production, evaluation and dissemination of knowledge. We live in what has been called a "knowledge society". An increasing number of industrial, commercial, governmental and media organisations are involved in knowledge processes. It has even been alleged that, at least in some fields, research is deserting the universities.

In those systems where the use of the word "university" has hitherto been limited to institutions specifically recognised as such by law and statute, but where there is also a non-university sector of higher education, problems of definition arise as to what is distinctive about the kind of higher education that a university provides. The implications are being discussed of the fact that, although governed according to different legal and administrative arrangements, and with a wider range of levels of work than most universities, some polytechnics, *Fachhochschulen*, Regional Colleges and similar institutions that developed in OECD countries as a consequence of the diversification of higher education in the sixties and early seventies are now doing work that in level and standard is indistinguishable from that of universities.

At the same time, the growth of vocationally-oriented courses in universities, and the virtual failure of attempts, at least at undergraduate level, to create "new maps of knowledge" that reflect the interdisciplinary nature of much contemporary scientific and technological activity and offer new principles of coherence to the undergraduate curriculum, has weakened university claims to fulfil a distinctive educational mission.

The Significance of Changes in Clientele

Discussions of the role and function of universities are increasingly based on *what* rather than *whom* they teach. Patterns of teaching and learning based upon the assumption that,

with few exceptions, entering students are the previous year's secondary school graduates, are decreasingly appropriate in the face of larger proportions of men and women candidates who have deferred entrance, who have spent several years in work, who are sponsored by their employers, who wish to follow only part of a full degree or diploma course, or who want to study part-time.

In nearly every field of study a substantially larger proportion of students than ten years ago are women. In some countries an increasing number are drawn from racial minority and/or immigrant groups. The last decade has seen only modest changes in numbers of students from the poorer and least privileged socio-economic strata. In many countries the importance of improving opportunities of access for these groups now seems to have lower priority than in the seventies.

There is growing emphasis on the role of the university as a provider of educational opportunities for adults – for purposes of personal development and liberal education, post-experience vocational updating and advanced training – but some doubt as to the relative priority that such activities should receive and the levels of funding that are appropriate.

Curricular Structures and Balance

Current curricula trends and problems reflect:

- First, the spawning by the post-World War II explosion of knowledge of hundreds of new academic specialities in the sciences and social sciences;
- Second, the impact of this explosion on academic organisation and the academic profession;
- Third, changes in university clientele such as those described in the previous section;
- Fourth, the emergence of new professions and vocations entry to which requires or is facilitated by university-level education;
- Fifth, the importance of the contribution that university departments and university staff (not always the same thing) can make to high technology developments necessary for the improvement of economic competitiveness;
- And, finally, the problems of negotiating new course and subject priorities identified by governments and by industry with largely autonomous academic institutions.

The impact of specialist and professional imperatives on the design, content and delivery of courses and programmes is not necessarily consistent with what an analysis of current and likely future economic and social trends would indicate as desirable. Two examples must suffice. In the United Kingdom, Australia and New Zealand, where the programme of first degree studies has been traditionally based on the single-subject honours model, there is considerable support, on both educational and economic grounds, for broader and more general curricula. It is difficult, however, for such a movement to make headway against the claims of research-based specialisation, the implication of these claims for the concept of excellence, and the associated status-system of the academic profession. Elsewhere, it is the length and apparent irrelevance of the undergraduate programme that occasions concern. In Finland, for example, the average length of degree courses has increased by one or two years over the past decade, although many of the students enrolled would elsewhere be classified as part-time. Efforts are still being made in several continental European and Nordic countries to contain or reduce the length of undergraduate programmes, which often have embarrassingly high drop-out and non-completion rates.

In today's employment market, there is a trend (more marked in some countries than in others) for an increasing proportion of students to choose vocational and professional subjects. This has evinced a ready response from some universities, the strength of which may be enhanced by greater competition for students consequent upon demographic decline. But the nature of this response has been coloured by universities' existing patterns of academic organisation. The emphasis has been on the part that academic knowledge can play in professional formation, rather than on the competences required by professional practice. The mechanisms that exist for mediating relations between universities, professional accrediting bodies and practitioners are not always effective in facilitating response to changing needs. In some cases, industry is itself developing facilities for high-level training of a kind that could just as well be provided by universities.

Circumstances can arise where attempts on the part of governments (and sometimes of institutions) to influence the distribution of academic effort through control of funds and of appointments deny higher education opportunities to students who wish to study "low priority" subjects, leave such subjects seriously underfunded and insufficiently resourced, and clash with informed academic assessments of what constitutes an appropriate balance of effort. There are signs of such problems in a number of countries at the present time (e.g. Germany, the United Kingdom).

The Place of the University in the National Research Effort, and the Place of Research within the University

The proportion of the national R&D effort undertaken by universities varies between OECD countries. In some, for example Australia and the United Kingdom, most basic research remains a university responsibility. Applied research and development, and routine testing, are done by other higher education institutions, private research facilities and industrial concerns. Elsewhere, responsibility for fundamental research rests mainly with specialised research institutes, often linked with universities but under separate legal and financial administration. In nearly all OECD countries, there is a dual funding basis for research. Some research funds come with the general university budget, others (and an increasing proportion) are in the form of specific grants and contracts which have to be competed for by universities and research institutes.

Research is still the *sine qua non* of university life for many academics. It is on research promise and reputation that they are appointed and promoted. It is on the quality and quantity of the output of research students and research findings that their departments and institutions are judged. Yet in reality only a minority of academic staff are productive in research, publish regularly, and make significant contributions to the advancement of knowledge in their subject and specialism. In several countries it is now being argued that the implications of this for university funding need to be recognised. Not all universities should receive the same *per capita* or historic base funding for research; especially so, given the increasing costs of high-quality basic work. The research function of some universities should, on this view, be limited to synthesis and dissemination rather than origination. The involvement of staff in such work will provide good opportunities for the kind of "updating study" essential to high standards of teaching at degree and diploma level. Research, it is suggested, can be very important as a means of supporting the teaching and other functions of the university, without every university being funded and equipped on the assumption that its staff will be engaged in highly original work.

Finding Ways in which the University Might Play a More Active Part in Technology Transfer, in Sharpening the Competitive Edge of the Economy, in Wealth Production, and in Regional Development

The last five years have seen many new developments in relations between universities and industry. Academics are involved in a greater extent than before in acting as consultants to multinational, national and local firms; many universities have themselves established companies for the purpose of exploiting their own research capability and expertise; national and international agencies have been established to facilitate the transfer of research-based knowledge to the design, implementation and evaluation of technological systems – and to draw out the implications for basic science of the introduction of new technologies, for it is no longer assumed that the relation between science and technology is unidirectional. The biological sciences, information technology, computer science and energy have been prominent among fields in which such developments have taken place; but the movement is much more widespread, drawing in specialists from economics, government, linguistics and other social science and humanities disciplines.

There is concern on the part of some governments about the apparent inability or unwillingness of some universities to devote sufficient time and energy to building associations of this kind, especially with local firms. University development in the sixties and early seventies stressed the national and international role of departments and faculties; some institutions turned their backs on the possibility of regional and local links, believing this would restrict opportunities for establishing themselves in the international communities of scholars and researchers, recognition from whom was essential to their research reputation and to the career prospects of their staff.

At the same time, there is anxiety both within and beyond the university about the consequences for academic autonomy of ever closer links with commercial undertakings. The divisive possibilities of such associations have been noted: "Two classes are being created within the academic profession; those who produce knowledge which can be made the basis of business enterprises, and those who do not". (Etzkowitz, 1983).

Another way in which universities are being affected by the wish of governments to benefit the economy through the exploitation of knowledge is through the increase in numbers of students on vocationally-oriented courses, not least at post-graduate level. The rapid obsolescence of knowledge in the contemporary world has led governments and industry to encourage an increase in post-experience study opportunities, on both a full-time and part-time basis, a development not without its problems in relation to university autonomy and accountability.

Adapting the Academic Profession to New Conditions and Demands

Rapid growth in the 1960s and early 1970s, followed by stagnation and actual decline, is in many systems causing staffing difficulties with which traditional patterns of academic post-holding are ill-equipped to cope. The age structure of the academic profession is distorted, particularly so in those subjects which grew most rapidly during the period of university expansion. Opportunities to make the appointments that new subject priorities and the emergence of multidisciplinary fields require are restricted. Promotion possibilities are reduced, with consequence for morale and motivation.

There is widespread conviction that, given their current pattern of organisation and governance, universities cannot cope with these problems without external intervention. Such intervention is increasingly coming from funding agencies, sponsoring bodies and governments, in the form of money earmarked for appointments in particular subjects; special

schemes for the recruitment of junior staff in shortage fields; changes in the legal or conventional basis of academic tenure; encouragement for the transfer of staff between departments and institutions, if necessary after retraining; the introduction of schemes to enable older and less productive staff to retire early, and a larger proportion of part-time temporary or seconded appointments.

Quality, Efficiency and Effectiveness in Universities

One consequence of the oil shocks of the seventies, of inflation, recession, unemployment, pressures on public expenditure – indeed, of the whole nexus of problems which threw doubt on the hitherto almost unquestioned value and importance of public educational provision and on the claims that some educators had made for its support – was a demand for greater accountability, for the more systematic evaluation of educational outcomes, for evidence of "performance", of value given for each dollar, pound, mark, franc, lira, escudo, drachma spent from tax revenues on schools, colleges and universities. Such requirements have become even more marked in the 1980s, as it has become necessary to be more selective in the allocation of resources. The differential treatment of people and institutions in a democracy requires public justification.

There is concern in several European countries about the length of time that students take to obtain first degrees or diplomas, and everywhere attention is being given to completion rates for higher degrees, especially the PhD and its equivalents. The Academic Council of the Federal Republic of Germany, which has several times expressed concern about the pressure that prolonged study programmes place upon universities, published a report in March, 1986 proposing a limitation to a maximum of four years (von Ow, 1986*b*). In the Netherlands, Germany and Denmark action is being taken by governments to reduce the length of first-degree courses, and elsewhere the issue of graduate productivity is receiving fresh attention. Central institutional monitoring of student progress has become more common, as in the Dutch AMOS model (*Analyse Model voor het Onderwijs op Studierichtingsniveau*). Agreements and differences between actual and projected success rates are discussed within special faculty committees and with the central administration (Drenth, 1986).

Even in the most exact sciences, the origination of new knowledge is not something that happens on a production line. In the humanities and social sciences, the ideas and theories and concepts that we use to order our realms of meaning, to communicate between individuals and groups, emerge as a result of reflection upon and participation in social and political processes essentially unpredictable in nature and occurrence. Academics are not loath to draw attention to such considerations in defending their institutions against external intervention and resource constraints. Governments, for their part, are increasingly disinclined to fund every university department, irrespective of its past track record in research and scholarship, on the basis that it may one day produce a revolutionary theory or technique. All this gives rise to problems of evaluation and allocation for the solution of which specialised mechanisms are needed, such as have recently been established or are in process of establishment in the Netherlands, the United Kingdom and elsewhere.

Greater efficiency and effectiveness are also seen as requiring leadership of a kind to which universities were unaccustomed in the days of plenty. Resource constraints have increased power at the centre not only of systems, but also of institutions. Rectors and Presidents and Vice-Chancellors, as well as Deans and Department Heads, are being called upon to exercise new responsibilities, for which they may not feel themselves well fitted by previous experience. Hence, provision is being made or planned in many places for more systematic administrative training for those who occupy such posts in universities.

Chapter 3

THE INSTITUTIONAL CONTEXT

Overall, the higher education heritage of the sixties and seventies is reflected in the following developments: the creation of new universities; the division of existing university foundations and the upgrading of other institutions to full university status; the establishment of specialist institutes and polytechnics offering long-cycle and/or short-cycle courses; the federal association of new and existing institutions; the establishment, in a very few places, of comprehensive universities; the setting up of open access multi-media teaching and learning systems (that of the United Kingdom being the longest established, with recent initiatives in the Netherlands, Japan and Spain); closer integration of teacher education and other kinds of post-secondary provision, and much discussion of the nature of and relations between adult, recurrent and continuing education.

All these developments represented a response to larger numbers of young people demanding access to post-secondary study, and to policy imperatives which stressed considerations of equity and access. Just as important, they reflected a commitment on the part of governments of all political colours to education as a means of enhancing economic growth, stabilising political structures, and facilitating social advance. The stance of governments and education authorities in OECD countries was not simply responsive but actively innovatory. New legal frameworks, new administrative structures, new institutions, new curricula were commonplace.

There is now extensive documentation of the way in which such optimism and innovation were halted, and even in some cases reversed, by the effects of student (and sometimes staff) unrest between 1968 and 1973, the economic consequences of the oil shocks that followed soon after, and the levels of unemployment experienced in the second half of the seventies. The notion is now discredited that educational advance on any and all fronts is an unquestionable good. The agenda has narrowed, become more focused and selective. In Goldschmidt's words (1984):

> "Universities no longer make even a pretence of being what has been expected of them since the Enlightenment, that is, institutions that, by their research and teaching, would pursue truth and foster the progress of mankind ... neither "liberal education", "Bildung", nor political activities are dominant goals today, only rational, intellectual training, vocational preparation and value free research ...".

Despite the importance attached to world trade agreements, the creation of the European Common Market, and North/South interdependence, and in contrast to the global nature of many scientific and intellectual communities, governmental and institutional priorities are in certain respects now somewhat *less* international and universalist. Many countries now charge full cost fees to non-nationals, academics are urged to give more emphasis to patenting their discoveries and applying them to the interests of their own country,

and some states are, for a variety of reasons, considering pulling out from expensive basic research commitments, such as CERN. On the other hand, new multilateral and bilateral research initiatives are constantly emerging, such as the French EUREKA project and the ASTRO C X-ray satellite. Many of these have their beginnings in academic contacts, and some are capable of being developed and sustained without large new research council subventions.

The Evolving Pattern of Higher Education

Thus, to appreciate the problems of the universities in OECD countries today, it is important to bear in mind the way in which the present system came into being, particularly during the period since 1960 and in relation to the development of non-university higher education during these decades.

As far as universities themselves are concerned, there are today what might be called the "ancient foundations", which in one form or another existed before the mid-nineteenth century; institutions created from 1850 to the beginning of the Second World War, mainly during periods of rapid industrial growth towards the end of the nineteenth century; new, "green fields", foundations; and universities that evolved from existing post-secondary structures. All have in common full and unequivocal official status as university institutions in their own countries, entrance standards and course requirements legally similar to those that exist elsewhere in the university system; the right to award their own academic degrees and diplomas or to present candidates for national awards; a level of research activity generally higher than that of non-university institutions; with few exceptions, a multi-faculty or multi-subject structure and, in each European country, a common basis of governance and financing.

It would be unfair to label many of the universities established in the sixties and early seventies as "traditional", since they initiated many innovations and administrative patterns that at least in their early years distinguished them from longer established counterparts. It is, of course, nearly always easier to introduce innovations where there is no heritage of past assumptions and procedures to be reckoned with. Some new universities were notable for introducing changes in such matters as the organisation of faculties and departments, the structure and content of degree and diploma courses – with an emphasis on pluridisciplinary approaches, methods of teaching, processes of internal self-government, and staff-student relations.

Yet, in most other respects, the new universities were very like the older foundations in their respective countries. Indeed, some such similarity was essential to their status as universities. They were generally expensive both to set up and to maintain, with high (and generally increasing) unit costs. Their staff were appointed on the basis of commitment to research as well as teaching. Dropout, failure and repetition rates approximated those of other institutions at this level. Organisational features such as the power of the chair-holder, or the complex procedures of institutional democracy, continued to influence the pace and direction of decision-making, as it did in more traditional foundations.

Governments anxious about the burgeoning costs of post-secondary education, the importance of a national research policy and the need to avoid proliferating small research and teaching units (as well as in some cases the apparently subversive activities of students uncommitted to any profession) have viewed these characteristics with a somewhat jaundiced eye [1]. Alternative structures, free of large-scale research commitments, with greater flexibility of organisation and offering a wider variety of courses and options have attracted favourable attention. It has also been argued that the very objectives that the university seeks

to fulfil – excellence in research, high standards of scholarship, creativity of ideas – suffer from a decline in the quality of staff such as followed very rapid expansion, and is unable to survive an influx of students whose abilities, interests and motives may be very different from those of previous generations. On the other hand, there are those who argue that expansion has not led to a general decline in the quality of teaching and research, but has produced a wider differentiation of criteria (OECD, 1983).

Not all the universities created in the 1960s were new foundations. A number came into existence as a result of the division or amalgamation of existing structures, or by the upgrading of non-university institutions. Paris was a notable example of the first process, with its thirteen universities, eight in the city centre, five on the periphery, with a measure of built-in specialisation of function from the beginning. Upgrading was also an important source of new university structures. What critics have called "academic drift" (see Böning and Roeloffs, 1970) – but which can also be seen as an inherent upward pressure towards higher standards and the extension of work into new spheres, reflecting the understandable ambitions and aspirations of staff and governing bodies – considerably facilitated the development of existing sub-university colleges, institutes and polytechnics into full-blown universities.

The significance of the part that existing, new and upgraded university foundations have played in the overall provision of post-secondary education must be assessed in relation to the very rapid development of the non-university sector.

In a report published by the OECD (1973), three main types of short-cycle institution – multi-purpose, specialised and "binary" – were categorised.

The first of these took the American Community and Junior College as its prototype, and had three main characteristics: first, close links with the existing universities, and ready transfer of credits; second, diversified curricula ranging from the first two years of university-level academic work to terminal vocational courses; third, the attempt to meet local or regional needs and the possession of substantial institutional autonomy.

The specialised type – for example, *Instituts Universitaires de Technologie* in France, *Fachhochschulen* in Germany – derived mainly from the continental European experience. It had few links with the universities, provided mainly terminal courses in specific vocational areas and in some cases rather little academic autonomy.

Finally, the so-called "binary" type, as seen in the United Kingdom and Australia, involved complete separation from the universities, with distinct administrative arrangements and sources of funding. Courses were offered in a wide range of subjects and at many levels, from part-time vocational programmes to post-graduate degree work.

Few other countries adopted a pattern of post-secondary reform that took after the multi-purpose, American Junior College model. In the United States itself, the number of publicly and privately controlled two-year institutions rose from 679 in 1965 to no fewer than 1 296 in 1982/83. By far the largest growth was among the public two-year colleges, which increased from 420 to 933, as against an increase of private institutions from 259 to 363. (It should also be noted that approximately a hundred privately controlled two-year colleges closed their doors between 1960 and 1982, compared with only some forty such colleges in the public sector.)

The close links with the universities that some saw as one of the strengths of the American two-year colleges, helping to avoid sharp discontinuities and perceived occupational potential, were viewed by others as potentially subversive of their mission. More and more responsibility, it was alleged, was being heaped upon the colleges, and some of the jobs they were being called upon to do were among the most intractable in the whole field of education.

The growth of non-university post-secondary education in many OECD countries in the sixties and seventies helped to protect the traditional missions of universities from the full

weight of student demand; did something to ensure that a substantial proportion of the much enlarged student body were pursuing courses which had a more explicit vocational orientation (although the growth of work in the humanities and social sciences was a particular feature of non-university development in some countries during this period); and were an important means of democratisation, making higher education available to those who might otherwise not have applied for or been unsuccessful in the competition for university places.

Some saw the functions of these institutions in a different light. It was argued that they served to protect the selectivity and exclusiveness of the higher learning and of preparation for the major professions, which continued to be the prerogative of universities, *Grandes Ecoles* and their equivalents. By providing a form of post-secondary education suitable for the needs and abilities of those likely to enter employment in the middle reaches of industry and commerce, and by making it easy to embark upon such education but, because of high dropout and failure rates, difficult to secure the credentials to which they are supposed to lead, non-university courses and institutions maintained the appearance of democratisation whilst recognising the "realities" of differential ability and motivation. To the extent to which multi-purpose, specialised and binary institutions, were so perceived, the further extension of post-secondary education by such means encountered criticism.

It also began to be alleged that these new types of courses were a substitute for the "real thing", that students were being fobbed off with something second best, that diversification of provision, whether in multi-purpose, specialised or binary institutions, was simply a way of protecting the old social and educational elites against contamination. The feasibility of distinguishing between the abilities, needs and interests that fit some 18 year-olds for traditional long-cycle university courses and others for short-cycle variants in different kinds of institutions was challenged.

To the extent that new types of institutions were less rigorous in their entrance requirements and provided a qualification of a lower standing or with less marketable potential than the traditional academic degree, the rhetoric of "equal status" and "parity of esteem" with existing university faculties and other high-status institutions was regarded with cynicism. This was mixed with a realistic appreciation of the fact that in the final analysis, equal status and parity of esteem are unlikely to exist while there remain large differences in the rewards and prestige of the occupations for which different courses and institutions prepare.

There is thus no OECD country today, apart from Austria and Italy (where discussions are currently taking place about the creation of non-university higher education institutions), in which universities are basically the sole providers of post-secondary education. (Discussions are taking place in Italy at the time of writing about the possibility of higher education provision outside the universities). There are everywhere non-university institutions, established under different laws and regulations from universities, and differentiated from universities along such dimensions as levels of funding, selectivity, research orientation, course length, subject balance, the salaries and conditions of service of staff, status, credentials awarded, and the types of employment to which their graduates pass.

In some countries, there are non-university institutions higher education that parallel universities on certain of these dimensions; e.g. by awarding degrees of similar status, or which, in a few cases, even possess higher academic or professional teaching rank; e.g. the French *Grandes Ecoles*. And, as we have seen, over the past twenty years some non-university institutions, such as the Colleges of Advanced Technology in the United Kingdom and *Pädagogische Hochschulen* in Germany, have been redesignated as universities, and become subject to similar funding arrangements and regulations as the older foundations and the new universities established from scratch.

There is no uniformity in the terms that different countries use to describe their non-university institutions of higher education. *Australia* has its Colleges of Advanced Education

(CAEs). *Canada* has Community Colleges, the titles of which vary between provinces; e.g. the *Collèges d'Enseigenment Général et Professionnel* (CEGEP) in Quebec. *Germany* has *Pädagogische Hochschulen, Kunsthochschulen, Musik Hochschulen*, and *Fachhochschulen*. In *Belgium*, non-university higher education is subdivided into *type court, type long, pédagogique* and *artistique supérieur*. France has the IUTs (*Instituts Universitaires de Technologie*) and post-secondary technical courses leading to the BTS (*Brevet de Technicien Supérieur*). *The Netherlands* has its colleges of vocational education (HBO). In *Japan*, in addition to both public and private universities, there are junior colleges, colleges of technology and special training schools. During the seventies *Sweden* established a unified administrative and legal framework for higher education embracing universities and other institutions with research facilities (referred to as traditional higher education) as well as former teacher training colleges, schools of social work, schools of journalism, schools of art, music and performing arts, and colleges of nursing (referred to as non-traditional higher education). By now the prevailing organisational pattern is that of a single comprehensive higher education institution in each place offering both traditional and non-traditional programmes. The *United Kingdom* has, in addition to forty-five universities, thirty polytechnics which teach wholly or mainly at degree level and which are also responsible for a growing volume of post-graduate study and research, and a large group of former colleges of education, now diversified, and institutes of post-secondary education which undertake a proportion of degree-level study and a small volume of research. The number of students enrolled in Community Colleges in the *United States* increased from 325 000 in 1955 to 3.4 million twenty years later, when 40 per cent of all individuals involved in higher education study were enrolled in such colleges. And although *Norway* has only four universities, it has fourteen Regional Colleges offering both professional and undergraduate-level courses, which to an increasing extent are competing effectively with universities for staff and students. Declining applications for undergraduate study are not merely a consequence of demographic downturn.

This is a by no means complete summary of a complex and varied institutional pattern. There are marked differences between systems in the extent to which staff and student mobility takes place between university and non-university sectors. A high proportion of the polytechnics, *Fachhochschulen*, Regional Colleges and other non-university providers of higher education are of very recent origin. Many of them developed from technical colleges originally undertaking upper post-secondary level work, or from professional schools. Such development was made possible by the general trend to upgrade qualifications, growth in the demand for courses and places in the 1960s and early 1970s, not least from employers who valued the more practical orientation of these institutions. In some cases it was encouraged by governments and education authorities as offering alternatives to growth in the number and size of universities that would have been a source of great institutional, educational and social strain.

For the most part, the polytechnics, regional colleges and similar institutions enjoy less autonomy than universities and a more substantial local or regional element in their governance, are funded less generously, and undertake a higher proportion of directly vocational and professional teaching. But any such generalisations must be treated with great care. In the United Kingdom, for example, considerable growth took place during the 1970s in the proportion of students at polytechnics studying for degrees in the humanities and social sciences.

Universities now differ enormously within and between countries in size, scope and range of studies, relations to the State, commitment to research and the status that they enjoy within society. Yet all to some extent see themselves as having roots in a common tradition – established many hundreds of years ago in Paris, Bologna and Oxford. Despite the introduc-

tion of so many new missions and patterns of academic life in the nineteenth and twentieth centuries, the structure, governance, academic organisation and perceived purposes of their "prime objects" continue to underpin many elements of university culture today.

The functions that universities perform cannot be easily derived from official or unofficial statements of goals and purposes. As Cohen and March (quoted Clark, 1983, p.19) put it:

> "Almost any educated person could deliver a lecture entitled "the goal of the university". Almost no one will listen to the lecture voluntarily. For the most part, such lectures and their companion essays are well intentioned exercises in social rhetoric, with little operational content. Efforts to generate normative statements of the goals of the university tend to produce goals that are meaningless or dubious."

The contrast between, on the one hand, the generality and the unspecificity of institutional goal statements, and on the other, the apparent clarity of purpose displayed by individual academics, departments and other teaching and research units, can only be understood by reference to the matrix organisation of knowledge – its production, conservation and dissemination – in modern societies. The modern academic enterprise is, of its nature, diverse and fragmented, held together by important educational, scientific and ethical commitments, but encompassing a great range of purposes. The academic and research staff of universities, and some of their technical and administrative colleagues as well, identify themselves primarily with discipline, field and profession, rather than as employees of particular institutions. The particle physicists and the medieval historians do not need each other, are not interdependent as are different groups within other productive enterprises, where each plays a part in retaining a market and ensuring profitability (Clark, 1983). When times are hard and funds are low, not just individuals but whole departments and activities can be – and have been – sacrificed in a way that strengthens rather than weakens institutional viability and academic coherence. It is not merely accidental or contingent that academic enterprises are plural, federal, loose-coupled. It is of their nature to be so.

If all this makes for difficulty in devising goal statements that are at the same time universal and meaningful, it also creates problems for a functional analysis based upon descriptions of what universities actually do. Such descriptions are seldom sufficiently detailed to accommodate the contrasts that may exist in the functions performed by the various elements *within* universities. The audience for much of what is written about higher education is made up of policy-makers, administrators, and academics with institutional responsibilities. Few authors claim acquaintance, let alone any profound knowledge or understanding, with the great diversity of disciplines and professional fields that feature in the activities of universities. Neither are they well informed about the national and international disciplinary and professional networks that link researchers and teachers across campus, state and national boundaries. And bodies concerned with the allocation of research resources in particular fields are, inevitably and properly, staffed mainly by specialists in the relevant disciplines; that is the meaning of "peer review". It is easy enough to enumerate the terms of reference and membership of such bodies, and the place they occupy in the national scheme of things. It is much more difficult for the non-specialist to become aware of how the criteria and the judgements used to evaluate proposals develop and change, which theories, methodologies, approaches, paradigms are currently on the up or on the down escalator, to know how and why certain individuals acquire – and lose – influence and standing in the evaluative process.

Thus, the authors of, and audiences for, studies of change in higher education focus upon the *structure* and *process* of academic life, rather than the *content* of what is preserved, transmitted and added to by members of the disciplines and professions that make up the university. Such a focus on overall structure and process can seriously distort interpretations

of the current scene and the identification of problems. Change, or lack of it, is not to be identified with what happens to buildings, to the legal frameworks within which universities are administered, to internal governance, the organisation of the academic profession, or other institutional phenomena. Change is the condition of universities. Their business is knowledge – its preservation, production and dissemination – and knowledge is in a constant state of flux. Yet, the scale and cost of their activity, its economic and social importance, and the residue of the sacred that even in this secular age still attaches to esoteric knowledge, combine to focus political and public attention on *institutions*, on structures rather than content.

Universities have become more differentiated and diversified as their number and size have grown. Given the extent to which universities are today dependent upon public funds, governments and official agencies responsible for the distribution of resources find themselves caught up in responding to and, by their decisions, influencing the various criteria by means of which the university system in each country is stratified.

Such stratification is seldom formal or official. In many countries there is a long-standing convention that all universities are equal, reflected in common bases of funding teaching and research, common salary scales and conditions of service, equal representation on national co-ordinating bodies, and similar minimum standards of admission. Such conventions persist in spite of large perceived differences in quality of student intake, research output and public reputation.

It is only in systems with very large numbers of universities that any kind of even informal and unofficial classification commands widespread attention. In the United States, the Carnegie Foundation for the Advancement of Teaching has classified post-secondary institutions as Research Universities I; Research Universities II; Doctorate-granting Universities I; Doctorate-granting Universities II; Comprehensive Universities and Colleges I; Comprehensive Universities and Colleges II; Liberal Arts Colleges I; and Liberal Arts Colleges II. The United States is unique among OECD countries in the number of its higher education institutions – in 1982/83 there were 1 984 offering 4-year and 1 296 two-year programmes. In Japan, which has the next largest number, there were in 1983 some 458 universities (96 national, 34 public and 328 private), 532 junior colleges, 62 colleges of technology and 2 328 special training schools which offered some college-level courses, with a total enrolment from all levels and sectors of 2.2 million students. Japan's universities have been unofficially classified as Research (24), Doctorate-granting I (121), Doctorate-granting II (35), Master-granting (185) and College (178). Under 60 per cent of all Japanese universities in 1983 had their own graduate schools.

In contrast, among the other countries included in the present study, Norway has 4 universities, the Netherlands 13, Canada 71 (21 "undergraduate and limited graduate", 24 "undergraduate with broad graduate", and 26 "full programmes at both undergraduate and graduate level plus medicine", etc.). Around 90 per cent of all university expenditures for funded research are in this third category of university. Quite apart from differences in overall population size, the role and function of the university in a country that has more than two thousand institutions is likely to be significantly different from those where universities exist in very much smaller numbers. Where universities are found in almost every town of any size, and are attended by a substantial proportion of 18-24 year-olds, mainly from the region or immediate locality, they are likely to conceive their mission in different terms from those of universities in systems with only a handful of similar institutions, geographically distributed, and attended by students from all over the country and abroad.

Differences also arise in terms of the standing and status which characterise different groups of institutions. There are in most OECD countries *high-status universities* with a major commitment to research, successful in attracting both student applications and external funds. Many, but not all, were founded in the nineteenth century or earlier; some are very

ancient foundations. All have established international reputations that attract scholars and faculty from all over the world. Their graduates enter prestigious occupations and achieve high standing in industry, commerce and the public service. In terms of the Carnegie classification, these are all "Research Universities I".

There are also many *specialised university-level institutions*, such as the French *Grandes Ecoles*, certain schools of music and art, colleges of law and of particular branches of engineering, which, although they do not engage in basic research, also enjoy high prestige and are associated with professional standing and success.

But large numbers of universities, including some but by no means all of those established in the last twenty years, are not among institutions of the highest world rank; they undertake varying amounts of research, and are markedly stronger in some areas of their activity than others. Some more recently established institutions in this group have experienced arrested development, not having had opportunity to achieve their planned size before the recession of the seventies and the decline in demand for higher education that has affected some countries. This has in some instances resulted in subject imbalance, usually in the direction of a higher proportion of arts and social science students than originally intended.

Pressures resulting from resource restraint, reductions in levels of public spending, loss of confidence in the contribution that education might make to a more equal society, actual or incipient demographic downturn, and conflict between academic imperatives and priorities and those of governments, tend to be most keenly felt by institutions in the third of these broad categories, and in some countries by certain subject fields, particularly in the humanities and social sciences.

Such universities and subjects do not always find it easy to secure private support to compensate for constraints in government funding. Fewer of their graduates occupy positions of power and influence in the private and public sectors. Their research grant and contract income is often restricted to one or two areas of particular distinction. They find it harder to attract high-quality students, some of whom, when they do not secure admission to high-status universities, prefer the vocationally-oriented courses offered in the non-university sector. Their more able and productive staff are prone to migrate to the research universities. Having in some cases sacrificed regional or local commitment to the pursuit of national and international aspirations, they can find themselves without political friends in their own geographical areas. The new patterns of academic organisation and teaching and learning styles, with which they started life or which they introduced in the years of growth, have proved difficult to sustain, and in many cases have been replaced by somewhat more traditional structures.

For all these reasons there are some universities and subject fields in OECD countries that today face particular difficulties. Their position is not much helped by generalised hortatory calls for adaptability and flexibility, social responsiveness and industrial commitment. Such analyses give too little weight to inter-university and inter-subject differences and overestimate the extent to which, even in centralised systems, decisions by funding bodies and governments can secure significant changes in the structure, content and process of university teaching and research.

Such universities and faculties confront special problems of mission and purpose. To justify their separate legal status and (at least in some cases) superior staff/student ratios and levels of funding, they need to maintain distinctiveness from non-university work at a similar level. But they must now also establish and legitimate criteria for evaluating their activities that go beyond both unidimensional research performance and success as measured by grant and contract income, and direct contributions to meeting what may be short-term labour market requirements. Such criteria are likely to include the synthesis and dissemination of

new knowledge and ideas – nationally and internationally – in specific areas of strength, regionally and locally on a more general basis; provision of undergraduate and post-graduate teaching of the highest quality and of innovative types of course content, organisation and delivery; capacity to identify and to explore the potential of niches of research and teaching effort some of which may yield important subsequent advances in knowledge (and which may ultimately need to be exploited on a wider front by more generously equipped and financed institutions); facilitating technology transfer in their regions and providing services to developing and established industries and commercial concerns; contributing to maintaining strong and geographically dispersed continuing and post-experience education opportunities, and to meeting the needs (for credentials, skills, social mobility) of specific minorities that may not have been well served elsewhere; and, not least, the provision of a base, in their regions as well as nationally, for the independent critical influences essential to the political and social health of a democracy.

NOTE

1. Suggesting that "the university as an idea and an institution ought now to be under critical scrutiny", the British political writer Paul Johnson (1986) has argued:

   "The suggestion that more and bigger universities would actually retard, rather than expedite, economic growth, would (in the 1950s) have been treated as preposterous. Yet that is precisely what we observe, as the products of 1960s' expansion climb into positions of power in politics, the unions, the media, central and local government, and, of course, the education system itself. The higher education-GNP syndrome has proved to be one of the costliest illusions of our century".

Chapter 4

ACCESS AND PARTICIPATION

However varied the functions of universities in the modern world, they retain their central role as providers of post-secondary education for a substantial proportion – and, in many countries, the ablest proportion – of secondary school-leavers who have the ability to pursue further studies and wish to do so. The millions of young men and women who, term after term, semester after semester, have registered and re-registered on campuses around the world for first degrees and diplomas have given the modern university its distinctive appearance, architecture, and character.

In many OECD countries, the numbers of such students have over the last twenty years doubled and redoubled. (In Spain, to take but one example, there was a *ninefold* increase in university enrolments between 1960 and 1980, from 71 000 to 650 000.) The post-war baby boom created a larger potential market for higher education. More boys and girls stayed on to complete a full secondary education and to qualify for further study. Families were enjoying a level of prosperity that enabled them to do without the earnings of their young. The growth of the "expert society" offered the virtual certainty of much enhanced earnings and career prospects on graduation.

As a result, in the twenty years from the mid-sixties the university scene was transformed. To meet the demand for places, existing universities expanded, new foundations were established and other institutions of higher education upgraded to university status. For many years, considerations of *access* dominated discussions of higher education. The function of universities in providing opportunities for those of humble social origins to develop their full intellectual potential, and subsequently to occupy positions of status and reward in society, was of great importance to governments and institutional authorities alike, although there is a diversity of views as to how effective were the efforts made in these directions. Where such egalitarian emphases still exist, they relate more to women, racial and religious minorities, rural youth and other identifiable groups rather than to particular social strata.

Generally speaking, higher *overall* rates of participation have been regarded as beneficial to improved group and class-specific access. Although in most countries the expansion that took place in the sixties and early seventies seems to have enhanced the opportunities of socially disadvantaged groups, the evidence also suggests that the *relative* standing of these groups has not improved significantly, particularly since the mid-seventies. The picture is by no means uniform. The *Australian* statement provided in connection with the present study asserts that "over the past two decades the social composition of the student population in universities has changed to a substantial degree" (p.24). On the basis of a number of national surveys and academic studies, the *Canadian* authorities state that "in general, despite government policies and programmes designed to make tertiary education equally accessible to the whole spectrum of society, the children of upper-middle and middle-class parents are over-represented at university" (p.22). In *Germany* the proportion of students in their first

semester at universities whose fathers are classified as "blue-collar workers" increased significantly during the 1960s but has remained at between 12 and 15 per cent since 1970, whilst the number of such students in *Fachhochschulen* has over the same period averaged some 26 per cent. In *France* the proportion of students from working class background attending universities and IUTs was 8 per cent in 1962 and above 12 per cent in 1982.

The tendency for a higher proportion of students in non-university institutions of higher education to come from working-class backgrounds is virtually universal in OECD countries. Data from the *Netherlands* show an increase in the proportion of lower-class students occurring between 1961/62 and 1974/75, the number of students from upper-social classes declining over this period from 42 to 33 per cent. In Dutch society as a whole, 8 per cent of the population belonged to this upper group.

Between 1972 and 1982, the proportions of students from each of the five income groups identified by the *Japanese* authorities hardly changed, but in contrast to many other OECD countries, there are very similar levels of participation across these five classes.

On the basis of a survey of aptitude tests for university entrance undertaken in *Spain* during the 1981/82 academic year, only 2.9 per cent of students came from social class 1 ("major landowners, businessmen, managers, higher civil servants, generals, university teachers and persons living on investment income"), with 20 per cent from class 2, 16 per cent from class 3, nearly 30 per cent from class 4, and the remaining third from classes 5 and 6.

Despite considerable efforts to create a more unified system of higher education in *Sweden*, there are still marked differentials in class participation across the institutional range. A 1977 study showed that whilst 41 per cent of students in the "new" higher education institutions came from working and lower-middle class backgrounds, this proportion fell to 22 per cent of those pursuing traditional university studies in subjects to which a "numerus clausus" applied, 25 per cent in traditional arts faculties, and 35 per cent in short-cycle courses.

The rate of participation by the children of unskilled workers is modest in all types of higher education, particularly so in the more selective programmes. The absence of tuition fees for home students and the provision of means-tested grant support for all those qualified to enter higher education and wishing to do so, although in place for some four decades, have not enabled the *United Kingdom* significantly to increase the proportion of students from working-class families, although, as elsewhere, there has over this period been a shift in the proportions of the population so classified.

Differential fertility rates between the social classes has been a factor in arguments about the size and shape of the higher education system in the United Kingdom during the 1990s. (United Kingdom country statement, p.23). The fall in the overall birthrate during the second half of the 1960s and the 1970s was much less marked among the social groups that contribute the highest proportions of university students. Hence, it is argued that the impact of this decline will be much less on universities than it has been in the case of primary and secondary schools.

In the *United States*, problems of access are increasingly defined in terms of women, Blacks, and Hispanic Americans. Blacks and Hispanics are historically under-represented in American universities (less so in the community colleges) but have higher fertility rates. Members of minority groups tend to be less successful in high school than their white counterparts. All this is likely to influence the effect on universities of a declining number of 18-24 year-olds in the overall population during the period up to 1995.

In *France*, although the overall size of the student population increased from 282 000 in 1962/63 to 773 000 twenty years later, the proportions of students from each socio-economic group showed only modest change, with nearly a third coming from the liberal professions and high-level employees (*cadres supérieurs*).

From time to time universities are urged by politicians, policy-makers, groups intent on radical social change, and advocates of the interests of the underprivileged, to place higher priority on equity considerations in their admission policies. Governments and law-makers have been looked to for legislation and judgements that would enhance participation by hitherto under-represented groups, even at the cost of knowledge prerequisites and standards. On the basis of a study of enrolments during the 1970s, Geiger (1980) concluded *inter alia* that the exhaustion of the high-ability pool in several countries had constrained growth in the university sector; that high-ability students had strong career incentives to pursue higher education; and enrolments of students who were either high-ability or from high socio-economic backgrounds had been diverted to the non-university sector. In the countries surveyed, the limits of higher education had been reached:

> "Only a minority, it would seem, possess the academic abilities to profit from sixteen years of formal education. Or, to put it more fairly, a significant proportion of young adults have talents which are best developed outside the classroom ... irrespective of demographic or economic conditions, a growing proportion of graduates will cause the incentives for graduate careers to regress towards the mean, thus weakening the principal motivation for seeking post-secondary education. These limitations show up implicitly in the arguments of proponents of sustained educational growth. They urge changing the nature of schooling in order to accommodate those who are poor at what used to be called "book-learning". Or, they propose changing the workplace, altering income differentials and reducing social stratification, all in order to restructure career incentives to harmonise with prolonged education".

Such movements have made little headway. Although there are sectors of post-secondary education in most countries where virtually open access applies, universities have continued for the most part to apply criteria based upon achievement, merit and promise, at point of entry where selective intakes apply, and, to a varying extent across systems, at particular watersheds (e.g. the end of the first year) during the undergraduate career.

Universities in general do not consider the social class origins of their students as a relevant factor in their admission and internal policies. They have enhanced the social mobility of many working-class boys and girls, whilst at the same time eschewing any self-conscious commitment to act as agents of such mobility. The extent to which they have been able to function in this way depends essentially on the proportion of working class candidates. As Trow (1981, p.95) has remarked, " ... it may be that the attitudes of secondary school students toward higher education will be a greater constraint on the growth of European systems of higher education than the traditional and structured (but now declining) conservatism of its institutions of higher education".

Age and Sex of the Student Population

If changes in the socio-economic composition of undergraduate populations have not been great, the character of the student body has in other respects changed profoundly. One of the most striking ways in which 1985 differs from 1965 is visible for all to see: the proportion of *women* students has increased in nearly every institution and field of study; in some countries women constitute a majority of students, not just in traditional "women's subjects" such as education and home economics, but in law and in some of the sciences. On average, university students are now a few years *older* than in 1965, more of them are *married* and in several OECD countries the percentage of *part-time* enrolments has increased. Students' *attitudes* to their work are also somewhat more instrumental and vocational than in the 1960s. Each of these features calls for special comment.

To a much greater extent than before, the university now offers general education equally to both sexes. This is true of countries with very different cultural traditions and values. In *Australia* in 1965, under a quarter of students enrolled in universities were women. By 1984 the figure was 45 per cent. Over the same period, a very similar change took place in *Greece* (from 25 per cent in 1963 to 44 per cent in 1983). The following figures for female university participation in a number of OECD countries have been taken from country statements provided in connection with the present study.

	Female Participation in the	
	1960s	1980s
Australia	24	45
Canada	34	51
France	43	51
Germany	24	38
Japan	16	23
Netherlands	18	33
Spain (1970-1981)	26	44
United States of America (1970-1984)	41	51

These figures document a general trend; they do not permit inter-country comparisons, as the basis of calculation in each case is not identical. The range of work that universities embrace varies both between countries and over time, e.g. by including teacher training. Since women are not equally represented in each subject field or type of institution, this can have a significant effect on the figures.

The recent increase in overall female participation owes something to larger numbers of women enrolling in courses and institutions which prepare for occupations hitherto thought of as largely male preserves. This applies in many countries to medicine and increasingly also to the applied social sciences, e.g. business management and commercial studies. In engineering women continue to be significantly under-represented but in some countries (e.g. Yugoslavia, Finland, Canada, the United States) this area witnessed quite a substantial increase of female students over the last decade. On the other hand the overall expansion of female participation in higher education has also resulted in a greater concentration of women in programmes where they already represented the majority of the student body. Such is the case, for example, in education and in the humanities in Finland, France, Canada, Australia, Norway and Spain, where the proportion of women in the total student body is higher than ten or fifteen years ago.

More often the student body in universities is not only now more female than before; it is also *older*. In *Australia*, for example, whereas ten years ago 64 out of every hundred university students were under the age of 23, by 1984 the number was down to 53. The proportion of 23 to 29 year-olds has remained fairly steady, but for those over 30 it has increased from 14 to 26 in every hundred. In the *United States* under 25 year-olds constituted 72 per cent of the total enrolment in 1970, only 58 per cent in 1984. The median age rose from under 21 years in 1968, to 23 years in 1982. In Canada, on the other hand, the age shift has been much less marked, with 92 per cent of college and university students still under 24 in 1983, compared with 94 per cent ten years earlier. In France, whereas at the beginning of the 1960s three-quarters of all students were 23 or younger, by 1982/83 this proportion had fallen to 62 per cent.

In some countries where there has been strong pressure for places, universities have not been able to admit large numbers of older students. Policy in *Sweden* now tends "to favour young students and the recruitment of larger numbers of mature students for existing studies is not encouraged" (Swedish country statement, p.18). This current policy must be seen,

however, in the context of the age shift that took place in entry to "traditional" higher education in Sweden between 1965 and 1982, when the percentage of those over 25 rose from 35 to 46, and the even more marked age shift – from 14 to 56 per cent – in the enrolment of over 25 year-olds to "non-traditional" higher education.

There are quite substantial differences within several countries in the way in which the age composition of intakes to university and non-university higher education respectively has changed. In *Australia*, for example, among the student population of the non-university Colleges of Advanced Education, under 23 year-olds fell from over 70 per cent in 1973 to only 47 per cent in 1983, whilst over the same period those over 30 increased from less than 10 per cent to nearly 29 per cent. Such changes have come about in part because of the diversification into other fields of what were formerly single-purpose teachers' colleges recruiting direct from secondary school. Where, as in *Canada*, the functions undertaken by different types of post-secondary institution have not been influenced by structural reform over the period in question, changes in age composition are much less marked.

The Part-time Student

Thus, universities undertake their general education function today for a student population that contains more women than ever before and, to a varying extent between countries, tends to be older than one or two decades ago. There is also a trend in some countries for the student body to contain a larger proportion of men and women who are employed and undertaking study on a part-time basis, the so-called "non-traditional" groups (OECD, 1985*a*). Again, the figures must be interpreted with caution. Differences between full- and part-time study are not always clear. How does one distinguish, for example, between the student who also has a job, and the employed person who is also a student? Attitudes towards part-time employment and part-time study differ between countries: in some it has long been accepted that men and women will work to support themselves during their college years, and student grant and loan arrangements reflect this convention. Elsewhere, e.g. the United Kingdom, even though a substantial proportion of university students work during vacations, "working one's way through college" is not an institutionalised expectation, and is not reflected in arrangements for student support.

All this said, a trend towards a higher proportion of both university and of all higher education students being classified as part-time does emerge from the country statements, although the movement is strongest in non-traditional universities, e.g. the Open Universities that have been established in the United Kingdom, in Japan, the Netherlands and elsewhere, and in non-university institutions of higher education.

It is sometimes suggested that increases in part-time enrolments are associated with low full-time participation rates, but some of the most substantial rises are in fact in those systems that already have a high proportion of the younger age groups in universities. In *Canada*, for example, part-time university enrolments grew nearly fourfold in absolute terms over the twenty years up to 1983, whereas full-time enrolments only doubled. In the *United States* part-time enrolments accounted for 32 per cent of the total in 1970 and 44 per cent in 1984. The *Swedish* authorities state that the numbers of full-time students in higher education is roughly the same today as in 1965, almost the whole of the expansion of the traditional sector being accounted for by additional part-time enrolments. Elsewhere, e.g. the *United Kingdom*, the number of part-time undergraduates in universities remains a very small proportion of the total. The big growth in part-time studies has been in post-graduate courses, especially those leading to master's degrees.

The ability of universities in some countries to provide part-time study opportunities has in recent years been affected by pressure of demand from school-leavers. The imposition of a *numerus clausus* in a greater range of subjects, highly selective entry, and lack of resources with which to hire new staff and open new institutions, have posed difficulties even for those universities that have wished to expand opportunities for part-time students. Even in systems where there is a place somewhere for every qualified candidate, competition is fierce for entry to the more prestigious institutions. Although evidence is sparse, it is suggested that some of those turned away do not then seek places elsewhere, and can be lost to higher education altogether. In several countries considerable numbers of candidates have failed to obtain a higher education place anywhere in recent years; in *Australia*, the Commonwealth Tertiary Education Commission has estimated that between five and ten thousand young people failed to obtain university or CAE places at the beginning of the 1984 academic year. In the face of impending demographic downturn, some governments have decided to avoid a short-term expansion that in a few years would require a painful reversal. The nature of the problem is illustrated by the figures for *Japan* (country statement pp.12-13) which indicate that to maintain the 1983 enrolment rate to all forms of higher education in 1992, the year of peak demand, would require 86 000 additional places to be provided over the course of the preceding seven years. But the scale of the subsequent reduction would within a fairly short time reduce this peak demand by 44 000 places.

Given the level of demand that universities have experienced from their traditional clientele for full-time undergraduate courses, it is unsurprising that many countries did not feel able to expand part-time study opportunities at first-degree level. There were also those who cited part-time students' relatively poor completion rates and who believed that limited resources were better invested in maximising school-leavers' chances for full-time study.

At least in some OECD countries, most of the expansion of part-time opportunity at first-degree level that has taken place over the past twenty years has been in the non-traditional sector, in polytechnics, some *Fachhochschulen*, regional and community colleges, and, to an increasing extent, through the multi-media Open Universities which utilise a mixture of correspondence tuition, radio, television, and residential vacation courses. The focus of Open Universities, such as the *Fernuniversität Hagen* in Germany, is, as their name suggests, on university-level study at both undergraduate and post-graduate level. Such institutions have diverted to themselves a proportion of the demand from part-time studies that might have gone elsewhere, but they have also helped to create new types of demand from men and women who otherwise would not have been interested in university-level study. Where for demographic and other reasons school-leaver demand is falling off, departments in traditional universities, especially those not in the first rank of research activity, are showing renewed interest in catering for part-time students.

Although the academic and social organisation of universities is still to a great extent constructed on the assumption that most students will enter on successful completion of their secondary education, this is by no means a necessary condition for a university to be recognised as such. To an increasing extent, as the number of non-traditional programmes increases, distance learning becomes commonplace, technical obsolescence makes updating study more important, and, even for the younger students, an interval between school and university is valued – equally by the increasing number of women candidates as by the men – the age, sex and study status of university's clientele has been changing. In those countries where the size of the 18-24 age group will shortly be diminishing, the tendency towards larger proportions of mature, continuing education, part-time and alternative course students is likely to grow. There is little evidence that, in themselves, such trends will damage or endanger universities. Even in Open Universities, based largely on distance modes of learning, staff have been expected to undertake research. There are many interdisciplinary, applied

and professional fields into which the possibility of recruiting more mature post-graduate students, with useful outside experience, would be beneficial all round. Part-time and alternative course study can be expensive, and unless funded adequately, can impose financial strains on providing institutions. There are, however, whole colleges based on the part-time mode of study (e.g. Birkbeck College, London) and this has not inhibited them from undertaking a full range of university functions.

In nearly every Member country of the OECD, there have in recent years been increases in the numbers of *adult students* in universities. The teaching function of universities is no longer exclusively directed to the "young elite". A recent OECD report on the participation of adults in higher education (OECD, 1985*a*) states unequivocally:

> "...continuing academic and professional education ... will become, or has already become, one of the main missions of higher education alongside, and on an equal footing with, the two principal missions it is traditionally assigned, i.e., the generation and the dissemination of research on the one hand, and the initial education and training of the young academic elite on the other".

In some countries, universities have traditionally provided extension or extra-mural courses, usually non-award bearing, for adult students in their regions. Recent developments in adult participation are much more varied. Older students enrol as undergraduates for full-length and shortened degree courses; for particular units or elements within existing degree and diploma programmes; for full- and part-time intermediate-degrees (Master's degrees in English-speaking countries) and for Doctorates. Currently, both *demand* for opportunities for adults to study in or under the auspices of universities, and the *supply* of such opportunities are increasing.

On the side of *demand*, competition for well-paid employment and for promotion within particular career lines adds value to the possession of additional credentials in the form of certificates, diplomas and degrees awarded by universities. In some occupations the possession of advanced qualifications brings automatic salary increments. Nearly everywhere, it facilitates career advancement.

Second, individuals seek to update their knowledge and skills in response to changes in the knowledge base and technologies of professions and vocations. Especially in the more high-tech forms of employment, where team efforts drawing upon skills from a variety of disciplines are of increasing importance, professionals seek to enhance their contribution by broadening through university study the specialised base provided by their earlier qualifications.

Third, as career opportunities in some fields decline and those in others develop, individuals enrol for programmes that enable them to change their jobs. This is especially likely where the flow of the newly-qualified "young elite" into such occupations is inadequate to meet demand, or where the skills and forms of understanding of the new job require a basis in another discipline or kind of work experience.

Fourth, shorter working hours and, in some countries, shorter working *lives*, leave a surplus of time and of energy that can be devoted to developing individual interests – which may or may not be in one of the traditional "liberal" subject fields – in a way that enhances social competence and quality of life.

Fifth, there is demand from adults in those sectors of society which did not benefit as much as others from the availability of higher education opportunities on leaving secondary school, e.g., for women, minority groups, immigrants and other hitherto "disadvantaged" groups.

These five factors are by no means discrete and exclusive. They often interact; the scale of the demand thus generated can create a climate which encourages people who fall into none of the preceding categories to look for study opportunities at university level.

Demographic factors have played a significant part in encouraging universities to *supply* opportunities for adults. Academics and administrators have been all too aware of the state of affairs described in the Canadian country statement:

> "It seems clear that the 18-24 age group which supplies in excess of 80 per cent of all full-time post-secondary students will drop by up to 18 per cent between 1984 to 1997. Unless there is a significant rise in the participation rate in post-secondary education or continued growth of part-time and continuing education there could be a reduction from the current full-time enrolment of 765,000 to 620,000 by 1997. 60 per cent of this enrolment is in universities and the balance in colleges" (p.10).

The success of the Open University in the United Kingdom and its counterparts elsewhere and demand from new age groups (e.g. "University of the Third Age" developments in France, the United Kingdom and elsewhere), offer ways of maintaining enrolments during a difficult transitional period.

Effective technology transfer requires that not only new recruits, but existing members of the workforce be offered up-to-date knowledge and skills, through post-experience vocational education, short courses, in-house programmes taught by university staff, in-service education and training, residential seminars and all the other means that universities employ to disseminate research findings and new syntheses among relevant populations.

Academics are aware that their more advanced offerings require students to possess not only an adequate basis of disciplined knowledge, but also appropriate experience. Many aspects of universities' current research and advanced study activities are unlikely to be appreciated by young undergraduates.

The increase in the proportion of universities' efforts devoted to technological and vocational education and training inevitably brings them into a more direct relation with the world of work and a more mature clientele.

The availability of new technologies permits and encourages more self- directed student learning. Television, local radio, video tape, video disc, telephone tuition, and the personal computer all make it easier for the university to extend into the workplace and the home.

A changing clientele does not in itself threaten institutional integrity. It does, however, call for change in programme organisation and delivery, pedagogy and course content. Systems and institutions that operate selective entry need criteria for mature candidates and part-time study other than, or supplementary to, the credentials obtained at the end of the secondary stage. Many such universities have been able to devise appropriate "special entry" criteria, without damaging the academic standards of the courses that such students pursue. Where there are overriding social considerations for positive discrimination in favour of particular ethnic or other minorities, the concept of "value-added" may need to be invoked in place of the traditional criterion-referenced standards, as long as this can be done without prejudicing the academic reputation of the department or institution. All in all, the concept of the university does not define a particular clientele, but it does embrace assumptions (many of them contested) about *what* it is appropriate to study in a university setting, *how* such study should be pursued, and what *level* of knowledge, understanding and skill students should have attained for the award of a degree or diploma. A changing clientele may significantly alter the educational and social organisation of the university, but entails no necessary threat to its educational integrity. The university is not endangered by changes in the age, sex, study mode and future intentions of its student body such as have occurred over the past decade and look set to continue during the next.

Chapter 5

TEACHING AND LEARNING

If changes in the age, sex, study mode and composition of universities' clientele impose no necessary threat, they do pose challenges. For reasons that are now beginning to concern governments and organisations interested in the promotion of economic growth as much as they concern feminists and educators, a smaller proportion of women than men choose to study scientific and technological subjects. Older entrants may have been in full-time employment for some years and be out of touch with recent developments in their subjects as well as out of practice in study skills, but compensate for this by a somewhat higher level of motivation. Lower overall employment levels have effects that are not all in the same direction. Universities can be seen as offering "free parking", a respectable way for young people to spend a few years while they assess their preferences and competences in relation to labour market opportunities. Certain credentials acquire enhanced labour market values, whilst others that confer little comparative advantage are devalued. Perceptions of the fate of preceding cohorts of graduates contribute to the highly imperfect "signalling system" by means of which the economy makes known its preferences and influences both the demand for and the supply of courses in particular subject fields. Insofar as governments and administrators and providers of funds rank subjects in order of importance, the criteria have increasingly become economic rather than scientific.

The content of post-secondary education is only in part determined by current national needs and priorities. History and tradition play their part in the organisation and content of degree and diploma programmes, as does the emergence of new knowledge. Most studies of the functions of universities are long on descriptions of structure and process, short on the analysis of content. Curriculum is often the missing chapter. The reasons are simple enough. Differences in history, organisation, governance and funding, between universities in different countries can be viewed as negligible in comparison with those that separate physics from sociology, chemical engineering from classics, biotechnology from music. The division and subdivision of disciplines spawns specialisms and specialists, to such an extent that even among those *within* a particular discipline, interests and research concerns can seem unrelated, communication is difficult, and it is only the amateur who can take the risk of pursuing studies across a wide field.

Most of those who write and speak about universities are themselves specialists – in speaking and writing about universities. If their origins were in an academic discipline, they are often no longer able to identify themselves with it – or are discouraged from doing so by their more specialised fellows. They make no claim to understand other subjects and professional fields, and are in no position to describe, analyse, comment upon or evaluate what goes on there. So the debate on curriculum can only proceed through the statement of generalities, kept aloft by aspirations for change which invoke openness, flexibility, breadth, coherence, progression and other high-inference notions. To hard-nosed sceptics among the scholars,

researchers and professionals, such language is empty of meaning, or cloaks a sinister political ideology, or is the last resort of those denied success and promotion in their own discipline – or sometimes all three.

It is not therefore surprising that comparatively little has been written about higher education curriculum, either within or across national systems. Outside the ranks of the proprietors of private colleges, or the proponents of particular religious beliefs, few individuals or groups of committed pedagogues are able to put their own stamp on the design and implementation of a particular curriculum. The intellectual structure of the courses that students follow owes more to history, incremental growth, departmental power struggles, and – to an increasing extent – governmental and political priorities than to a considered attempt to devise and to justify a particular "selection from the culture" on educational principles.

The Undergraduate Curriculum

The possibility of devising and implementing a more coherent, broadly based, intellectually defensible and educationally beneficial experience has for many years been squeezed out by the powerful forces of specialisation and vocationalism. In several countries there is however renewed interest today, inspired by the need to cater for a changing clientele and to adapt programmes to economic needs, in the principles that underlie the organisation of the undergraduate curriculum.

There are considerable differences in views both between and within countries as to how undergraduate courses in the arts and the sciences should be organised, and in what counts as a vocational or professional programme. In some systems, the study of law, for instance, is justified in terms of its general educational benefits, or as a preparation for a much wider range of jobs than those which are offered by the legal profession itself. In many universities the equivalent of the single-subject honours degree has reigned supreme as a model of undergraduate teaching and learning. Students are registered in a single department, the staff of which provide all their instruction and guidance. The courses that make up the programme for the degree are each taught by specialists in particular parts of the subject. Such specialist programmes are customarily well thought out and implemented, and all the members of the department play a full part in design and evaluation. In many fields there is a formal or informal understanding about how many staff are needed to ensure coverage of each of the specialisms involved, and thus of the minimum size for academic viability. Efforts originating within or strongly supported by a department for certain extra-disciplinary courses to constitute requirements are often successful. Proposals originating at faculty and university level that do not achieve departmental backing are much less likely to gain acceptance, or to secure the involvement of staff whose contribution is necessary for success. In this, as in so many other respects, curriculum change is a "bottom-up" process, rather than the outcome of attempts to impose a particular overall design.

In many systems, vocationally-oriented and professional programmes have been gaining ground in recent years, their content and organisation predicated on professional requirements, sometimes mandated in great detail by specialist accrediting agencies (Carnegie Foundation, 1983). There is often only limited scope for the introduction of additional elements designed to broaden and "liberalise" the programme. In some professional fields there are large numbers of candidates and a limited number of posts available; special tests have been introduced, either by individual universities or by national systems, to control the flow of admissions. In Germany, for example, applicants for courses in human, dental and veterinary medicine must now take special aptitude tests which count for half the necessary marks, and universities will be able to exercise some discretion in offering places on the basis of personal interviews.

It has been argued that absence of agreement within the university about what should constitute a worthwhile course of undergraduate study is *the* major contemporary crisis of academe.

> "There may once have been general agreement on a body of knowledge that, when accepted and mastered, would give to its holder self-understanding and a role in society – the Greek Academy, the medieval trivium and quadrivium, the liberal-humanistic curriculum of the nineteenth century. But there is no agreement now on the essential intent, the best form, or the likely consequences of students' courses of study" (Martin, 1982, p.29).

In the space left between specialised and vocational/professional programmes, there has been something of a free-for-all in undergraduate study. In many cases, students have been left to construct their own programmes, on no other principle than personal preference and past acquaintance. Modular and unit-based courses, advantageous from a timetable and logistical standpoint, have sometimes spawned so many subdivisions as to lose credibility, with students taking half and even quarter units in subjects that have little reference to the rest of their programme or to any coherent set of educational principles, and where the shortage of time available precludes achievement of the depth of understanding that should be characteristic of study at the level of higher education.

The present trend in higher-status institutions seems to be away from electives in favour of prescribed requirements, although this is by no means universal. The content of some highly-specialised honours courses has been broadened by interdisciplinary elements and the need to acquire computing and linguistic competences. The weaknesses in some areas of beginning students' knowledge have in the United States led to wide-scale provision of remedial teaching, now offered by some 80 per cent of American universities. Dissatisfaction exists both within and beyond universities in many countries about current methods of student selection based upon secondary school leaving examinations. In Australia a report by a group within the federal Department of Education suggests that such dissatisfaction might lead to universities devising their own procedures:

> "Until now a remarkably divergent range of interests and views has been accommodated, but it would be foolish to deny that major setbacks such as the establishment of separate university entrance examinations, or the formation of groups of schools to run their own exam systems have become real possibilities" (Maslen, 1986).

The source of incoherency and apparent anarchy of the undergraduate curriculum is sometimes identified with the disappearance in the Western world of a satisfactory overall concept of what it means to be educated.

> "Unwilling to surrender to the nihilism and relativistic anarchy they see lurking behind pluralism, educators do maintain that universities have purposes and priorities, serve an ideal, and set their goals above the contingencies of the consumer market-place. Unable to agree even among themselves on what constitutes that ideal, burdened by the reductionist insight that translates their ideals in the expressions of particular moral and political interests, they retreat to the *smorgasbord* strategy" (Kaplan, 1980).

In a report published in late 1984, the American Association of Colleges alleged that a supermarket mentality pervades the undergraduate curriculum, and that "fads and fancies, the demands of popularity and success, enter where wisdom and experience should prevail". The Association proposed that every student should follow a nine-point programme based upon "The intellectual, aesthetic, and philosophic experiences that should enter into the lives of men and women engaged in baccalaureate education" and including enquiry, abstract thinking and logical analysis; literacy – writing, reading, speaking and listening; understand-

ing numerical data; historical consciousness; science; values; art; international and multicultural experiences, and study in depth (Norris, 1985).

There have been particular anxieties about the decline in some countries in the proportion of students majoring in the humanities. A report by the National Endowment for the Humanities in the United States (Bennett, 1984) found that over the last fifteen years the number of students whose major subject was English has declined by 57 per cent, in philosophy by 41 per cent, history 62 per cent and languages 50 per cent. In conditions of rapid technological and social change, students' course and employment preferences can change rapidly, although planning and supply lags mean that numbers enrolled alter more slowly. A survey of 1985 college freshmen in the United States showed a 50 per cent decline since 1983 in those who intended to make their careers in the computer business, a smaller fall in engineering intentions – and a record number who saw their future in business (Norris, 1986). The high proportion of students selecting business majors has caused some American universities to limit growth in these fields, for fear of distorting their entire academic programme.

One approach to obtaining agreement to what constitutes an educated person in the context of today's emphasis on specialised and vocational courses has been to identify certain forms of knowledge, skills and dispositions which might be the outcome of *any* programme for a degree or diploma, irrespective of its subject matter. For example, the study of any of the sciences might be expected to yield understanding of its historical development and relations with other fields; enhanced ability to communicate in speech and writing; the capacity to work as a member of a team in the solution of common problems; respect for evidence; commitment to accurate measurement, and other such transferable skills and qualities.

Educators have often stressed that in the hands of inspired teachers it is possible for almost any subject, however limited in scope and application, to be taught in a manner that enlists a full intellectual and affective response from the student, which stretches cognitive capacity, refines sensibility and sustains motivation. Equally, routine and unimaginative teaching, even of the most "liberal" subjects and those which on the face of it have the highest chance of attracting the active engagement of the learner, can quickly diminish, dull or destroy interest and involvement. Given the great diversity of subject matter that today characterises undergraduate programmes, and the complexity of its organisation and modes of delivery, the best hope of securing agreement to principles of coherence that might counter the weaknesses of what has been called the "junk-yard curriculum" may be in identifying those general qualities of mind and character that might be developed through individual courses and programmes.

There may also be scope for a more conscious acceptance and even encouragement of a diversity of teaching and learning styles *between* institutions, with whole faculties and universities attempting to develop a distinctive approach to the field in question. For this to be possible there need to be some universities and departments of relatively modest size; pluralism is almost inevitable in large institutions. There are extant examples in OECD countries, not only of particular faculties and schools but of whole colleges and universities recognised as having a special character and approach to learning. The encouragement of such institutional diversity requires flexibility on the part of governments and funding bodies in staffing and resource norms and in applying cost-effective and performance criteria.

Pleas for greater coherence, unity and common purpose may be necessary to muster centripetal influences against the otherwise unchallenged pluralism of the modern university. But such coherence and common purpose is both more surely and more *safely* achieved – in the sense that the imposition of a common curriculum, even assuming it was feasible, entails high costs in freedom and capacity for innovation – through the continuation of active curricular debate and institutional diversity than by other means. Clark (1983), referring to the

difficulty that the university has in reconciling its basic values of social justice, competence, liberty and loyalty, and simultaneously satisfying the requirements of the State for socio-economic, cultural and political relevance, argues that "without doubt, the structure of a higher education system must be full of contradictions, inconsistencies and compromises, if it is to express effectively these four disparate policy values".

The Balance of Studies

It is not within the scope of this report to offer a detailed analysis of the courses and programmes followed by students in the universities of the OECD countries that have provided statements. Something can be said, however, about overall numbers pursuing different types of courses, and how these have changed over the past two decades, especially in relation to the functions fulfilled by non-university institutions of higher education.

It is striking that in many OECD countries, despite large-scale absolute growth in higher education numbers, there has been only modest change over the last twenty years in the proportion of students studying science and technology, the social sciences and the humanities respectively. Systematic comparisons are difficult, due, for example, to differences in subject classification, and to institutional changes such as the incorporation of teachers' colleges into higher education (e.g. Australia, United Kingdom) and the bringing into universities of work in medicine and health formally carried out elsewhere (e.g. Norway). But even on the very crude basis of comparison which is all the data permit, it seems to be the case that in more countries than not, the proportion of students pursuing scientific and technological studies in universities has either remained stable or diminished, at a time when many policy-makers and administrators are insistent on the importance of these subjects to the health of the economy. Nor is this fall always compensated for by growth in these subjects in the non-university sector. In France, attempts to secure greater emphasis on science and technology have included the introduction of a new technical *baccalauréat* for high school students, and the creation of five new technical universities. These universities and the existing *Instituts Universitaires de Technologie* are expected to increase their intake from 60 000 to 90 000 students by 1990 (Follain, 1985).

In *Australia*, for example, the proportion of university students in science and technology, including medicine, fell from 41.6 per cent in 1973 to 37.7 per cent in 1984. Over the same period the proportion of social science students remained the same at 28 per cent, whilst those in arts and humanities increased slightly from 30 to 34 per cent. The integration of former teachers' colleges with Colleges of Advanced Education between 1973 and 1984 more than halved the proportion of students in the CAEs studying science and technology, and increased numbers in the social sciences from 28 to 63 per cent. Concern about low numbers taking science and technology courses led the Minister of Education to announce in July 1986 the setting up of a high level working party to undertake an urgent examination of the causes. (Australian Department of Education, 1986).

In *Canada*, the number of undergraduates pursuing courses in general science fell from 27.5 per cent in 1965 to 16.3 per cent in 1983. Engineering and applied science numbers, some 10 per cent of the whole, showed little change over this period. The principal area of growth was in commerce and business administration, which accounted for 5.7 per cent of undergraduate enrolments in the mid-60s, and 13 per cent by 1983.

In the *Netherlands*, university students of science and technology fell from 52 per cent of the total in 1965 to only 36 per cent in 1983. In non-university institutions there was an increase over this same period from 21 to 28 per cent. Falls in the proportion of university

students studying science and technology were also recorded by *Spain* and, at a modest level, by *Norway*. Such figures must, however, be treated with caution. For example, although in Italy since 1981 an increasing proportion of the declining student number have chosen humanities rather than science and technology courses, the fact that a large number of such students are part-time and that dropout rates are high, means that the actual output of graduates from humanities faculties has fallen over the same period (Gamberini, 1986).

There were several countries in which the proportions in the science and technology group remained more or less level, e.g. in *Germany*, *Japan*, *Sweden* and the *United Kingdom*. Only in the United States did there appear to be a striking increase in the proportion of freshmen electing subjects such as engineering and computer science. In the words of the United States country statement:

> "The most dramatic trend has been the move to careerism and professional specialisation. English, History, the Fine Arts, and Education – which were at one time strongholds for degree candidates – have been displaced by such fields as chemical and electrical engineering, computer science, business management, or technical programmes in building and mechanical trades. Since 1978, the proportion of freshmen planning to major in computer science has increased by 221 per cent, while those in data processing increased to 138 per cent ..." (p.95).

In *Japan*, engineering has occupied an important place among university subjects since as long ago as 1870. Some 19 per cent of undergraduates and 32 per cent of post-graduates in Japan today are students of engineering.

Many, although by no means all, of the "new subjects" that had no place twenty years ago in the undergraduate curriculum but are now selected by an increasing proportion of entrants, offer credentials and skills of more or less direct utility in the labour market. As we have seen, this is not to say that they make no contribution to the general education of students, or that they cannot be taught in a humane manner, with stress on developing general, as well as specific, potentialities for learning, understanding and evaluating. Efforts to include course sequences and units as prerequisites, options or electives, which offer a broader context for specialised learning and the application of skills, reflect not only educational convictions but a realisation that few credentials are so specific, few employment sectors so short of labour, as to guarantee employment to the graduate in precisely the field in which his or her "formation" has taken place. Such efforts recognise what Mark Blaug (1982, p.16) says about specific manpower training:

> " ... there is no real sense in which a given level of education in the economically active population of a country can be said to be technically "required" to permit the achieved level of economic growth of that country. That sort of argument grossly exaggerates the contribution of manipulative and cognitive skills in the performance of economic functions, ignores the fact that such skills are largely acquired by on-the-job training, and utterly neglects the vital role of suitable personality traits in securing the "invisible handshake" on which production critically depends."

Another reason for emphasizing general qualities of mind and of judgement has been a turning away in recent years from deterministic, sociological explanations of the success and failure of individuals, enterprises and nations, towards a recognition of the importance at all levels from shop-floor to Cabinet Room of political negotiation and the role played in that process by trained individual judgement. But as Kogan (1984) suggests, however important the skills and dispositions developed by courses of general and liberal education may be at higher levels of decision-making, there remains at intermediate and lower levels a need for more specific technical and vocational training, such as many courses in universities, polytechnics and colleges today provide.

The Post-graduate Curriculum

There are great variations within and between systems in the proportions of post-graduate students that universities enrol. The Bachelors/Masters/Doctorate model found in English-speaking countries and Japan, with its relatively short, three- or four-year first stage and with all degrees awarded by universities themselves, is more clearly stratified than the award structure of many European countries, and distinctions between what does and what does not constitute post-graduate work are easier to draw. Furthermore, the meaning and significance of the PhD in the United States, the United Kingdom and elsewhere is not the same as many European doctorates, a fact reflected in the proportions of students graduating at this level. In Belgium, for example, out of a total of just under 18 000 university-level awards made in 1983, nearly 4 000 were *Doctorats*, but only 469 of these involved the preparation of a thesis. But even within the Bachelors/Master/Doctorate structure there are considerable differences between systems in the proportions of students in different subjects who undertake graduate work. In Canada, for example, some 30 per cent of graduate students in 1983 were in the social sciences, and only 9 per cent in maths and physical sciences.

In most countries teaching for post-graduate awards or their equivalent is the prerogative of universities. In some, however, non-university institutions of post-secondary education can prepare students for Masters-level examinations (e.g. Australian Colleges of Advanced Education) or even for Doctorates (Polytechnics in the United Kingdom).

Blume and Amsterdamska (1987) suggest that most of the limited expansion that has taken place in graduate work during the seventies has been at the level of the "intermediate" degree, such as the one-year Masters' courses that have developed in the United Kingdom. These offer specialist qualifications in both vocational and academic subjects, and in some fields are prerequisites for subsequent doctoral research. In some countries, such as the United States, the 1970s saw an actual decline in the number of PhDs awarded, and there is concern on the part of both academics and policy-makers that the quality of doctoral candidates may be declining. Given the importance of the PhD for entry to and progression in the academic profession, diminished opportunities for university employment may be a factor in these trends.

Diminished numbers and strained circumstances have encouraged the view that graduate work might profitably be concentrated on a smaller number of centres. Yet Blume and Amsterdamska (1987) found that:

> " ... despite the predictions that the general contraction of graduate training in the 1970s and early 1980s would result in a greater concentration of post-graduate studies and despite the policy preferences expressed in certain countries to concentrate post-graduate training in a smaller number of 'centres of excellence', no such trend towards greater concentration of post-graduate training can be observed".

It may, however, be a little early to conclude that policies of greater concentration, where they exist, will not be effective. For instance, the United Kingdom University Grants Committee is having to phase in over several years its new policy of greater selectivity in the allocation of funds to sustain the "research floor", since immediate implementation would have serious consequences for the financial viability of some universities.

A high proportion of students enrolled at the graduate level is usually associated with the academic standing of an institution or department. It is interesting to note that in Australia, where the Colleges of Advanced Education are permitted to enrol students for Masters-level courses, the proportion that these constitute of all enrolments increased from 5.3 to 13.3 per cent over the ten years to 1983. Graduate study is also the most international aspect of the work of universities, and some countries enrol large numbers of overseas graduate students.

In many places it would be unthinkable for an institution to claim the status of a university without being able to teach for higher degrees and undertake research supervision. In those university systems in which there is already considerable diversification, and no parallel system of public-sector institutions providing full-degree courses (e.g. Japan and the United States) there are large numbers of universities which have no graduate schools and do not undertake a significant volume of research. This is sometimes cited as evidence that the essential character of a university is not endangered by the policy of concentration being implemented or discussed in some countries. But what is and what is not "essential" to the character of a university depends upon the overall institutional context. Academics are sceptical about the effects of partial transplants from overseas models. Especially in those countries with binary systems of higher education, such as the United Kingdom and Australia, or where the overall proportion of the relevant age groups who undertake post-secondary study remains modest, to deprive a university of its opportunities for research and graduate-level work would, on this view, seriously endanger its claims to recognition as a university. The exercise of student choice in the market for places and of staff preferences for appointments would soon accelerate its academic decline.

Non-traditional Curricula

The rate at which alternative, non-traditional programmes have grown in the universities of OECD countries has been affected by such factors as the commitment by systems and by individual institutions to widening access to hitherto under-represented groups (e.g. the City University of New York Open Admissions Scheme); a desire on the part of a university to become more fully integrated with the life of its urban locality or region; demand for "drop-in" study opportunities both for life enhancement and for vocational purposes; the possibility of bringing university resources to bear on topical problems; the acceptability of the concept of "value-added" as an alternative to criterion-referenced measures of attainment; and the possibilities opened up by new methods of distance education, including e.g. radio, television, the telephone and interactive videodiscs (OECD, 1985*a*).

Such efforts have inevitably attracted their share of criticism, not least on the grounds that many of them are inconsistent with what is central to the existence of the university – the highest cultivation of the intellect.

> " ... the Intellect ... That is what universities are for. Everything else is secondary. Equality of opportunity to enter the university is secondary. The need to mix classes, nationalities, and races together is secondary, the agonies and the gaieties of student life are secondary. So are the rules, custom, pay and promotion of the academic staff and their debates on changing the curriculum or procuring the facilities for research. Even the awakening of a sense of beauty, or the life-giving shock of new experience, or the pursuit of goodness itself, all these are secondary to the cultivation, training and exercise of the intellect" (Annan, 1970).

Whatever the educational and social justification of non-traditional programmes and forms of organisation, for some critics they were not and are not a legitimate part of the responsibilities of a university. Indeed, their existence in university settings endangers the central core of values that universities can uniquely sustain and protect – excellence, the life of the mind, a critical standpoint vis-à-vis the State and the culture of the wider society, the pursuit of pure, curiosity-oriented research and scholarship. For some, the university has endangered itself by being too responsive to ephemeral "needs".

"It is surely impossible for the university to be anything and, at the same time, to be all things; to meet any personal needs and at the same time, to meet all imaginable personal, psychological-social-cultural needs ... one of the highest priorities for the rehabilitation of the university as the setting for ideas, as the scene of teaching and scholarship in the learned disciplines, is the abandonment of the present limitless, boundless, Faustian conception of the university and its relation to men and society" (Nisbet, 1971).

Most of the non-traditional forms of university education that presently exist in OECD countries were initiated two decades ago. At that time there were those who had high hopes for the development of the comprehensive, integrated university, which would embrace within a single organisational framework a great variety of missions and programmes, both traditional and non-traditional. In practice, whilst most of these innovative missions and programmes can still be found in one form or another, they have developed through diversified rather than integrated models. Institutional specialisation has increased. Yet contrary to fears that traditional high-status forms of university education would be swamped by the rush of novelties, they have in many countries survived and prospered. Open Universities, Technological Universities, Distance Universities, many specialist colleges and institutes with university status, along with the extra-mural, outreach and industrial liaison activities of traditional foundations have helped to legitimate a conception of the work of the university that is a good deal broader than that which existed a quarter century ago. It is arguable that this has happened without a serious threat to core values having materialised. A judgement on this point must await more detailed consideration of the research functions of the university in Chapter 6.

The Improvement of Teaching

It is sometimes argued that a university which concentrated its efforts on teaching could rapidly build up an enviable reputation among good quality candidates, and thus maintain its excellence and status without reference to its research record and post-graduate work. There are indeed examples of institutions, such as some of the American Liberal Arts colleges and the French *Grandes Ecoles*, which are predominantly dedicated to teaching, and enjoy favourable reputations, but special historical and social circumstances make it difficult to generalise from such instances. The realities and the practical politics of system differentiation may well require abandonment of attempts to make a sharp policy distinction between universities with or without a research and post-graduate role. Not all research worthy of the name is of the same order. Some universities can play an important role in the re-ordering, synthesis and dissemination of existing knowledge, without needing to be funded at the same level as the national equivalent of "Research Universities I". These are issues to which it will be necessary to return in the next chapter.

If the discussion of university curricula and course design on a comparative basis is not well developed, the discussion of course delivery and pedagogy has fared little better. Economic and administrative issues associated with the design, procurement, placement and utilisation of audio-visual aids and computer-assisted instruction in universities have attracted attention in recent years, but seldom in the context of larger questions of overall course design and delivery and student learning. In most systems there is still considerable reliance on the lecture, the seminar, the demonstration and the tutorial, without much recourse to sophisticated teaching equipment. As a consequence of financial pressures, staff/student ratios have deteriorated, especially in the humanities and social sciences. In New Zealand, for example, between 1979 and 1984 staff numbers increased from 3 250 to 3 323, which represents one teacher for each one hundred and twenty two additional students (Wright,

1984). In many European countries, students of the humanities and social sciences are now taught in classes widely regarded as too large for effective learning.

There is no OECD country in which university staff must acquire professional teaching qualifications as a condition of initial or continuing employment, although such requirements are virtually universal at the primary and general at the secondary stages of education. In the face of changes in the age, background and aspirations of the student body, there are signs of greater interest in professional staff development and the evaluation and improvement of teaching in higher education.

Netherlands universities have established Centres for Research on University Education (*RWO*) "which are designed to help improve university education on the basis of research carried out by the centre itself or elsewhere. Research areas include teaching methods other than traditional lecturing, student behaviour and motivation, evaluation of courses and course examinations" (Netherlands country statement, p.13). In the *United States*, course evaluation by students is of long standing and practised by the majority of institutions. In many places, it constitutes a formal part of tenure and promotion procedures. Most *Australian* universities have specialist units concerned with the improvement of teaching. In *Germany*, a number of *Hochschuldidaktik Zentrum* are active, although the fortunes of such units have been mixed (Gasch, 1979) and they are now of less importance. A Committee on University Teaching Methods was set up in *Sweden* in the early sixties, and national staff development programmes initiated. In the *United Kingdom*, the Committee of Vice-Chancellors and Principals has established a committee to monitor and assist the work done by universities individually and in regional groups, and Secretaries of State have on several occasions stressed the importance that is attached to the improvement of teaching and learning in higher education and to more systematic staff appraisal.

Although formal provision for staff development and the improvement of instruction exists in nearly every system, actual levels of staff involvement have tended to be low, and at times of financial constraint many universities have been reluctant to increase (or even in some cases to sustain) their investment in what for many academics is a low-priority activity. In this, as in so many respects, active support at department or institute level would seem to be a condition for success. Such work may also be stimulated by the increased market orientation characteristic of demographic downturn, and by a leavening of more experienced and critical students. In the United States there are already whole volumes devoted to the teaching of adults, for which the term "andragogy" is now coming to be employed.

The Informal Curriculum

The part that extra-curricular activities and student social life can play in developing "life-skills" and desirable personality traits is widely acknowledged, but is not in most universities today the subject of systematic planning and intervention by academic or college authorities. Efforts to influence, let alone control, the personal lives of students have been largely abandoned. Student culture and the general youth culture are virtually indistinguishable. Some urban universities offer little by way of residential accommodation, and most students commute daily to their studies and live at home or in rented accommodation. Save in a few highly selective and usually highly self-conscious places, the collegiate ideal has for all practical purposes disappeared. All this is today so commonplace as to go unremarked. The concept of the collegiate residential university has been a casualty of expansion.

The culture and values of institutions are clearly influenced by the subject balance of their teaching and research. Those institutions most affected by the acute student militancy that occurred in some countries from the mid-sixties to the early seventies tended to be those

with the highest proportions of students in arts and social sciences. Students working for vocational and professional qualifications, especially in potentially high-status fields such as medicine, veterinary science, engineering and law, were generally speaking non-militant or even anti-militant.

Limited internal interdependence reduces cross-disciplinary contact for both staff and students, and vitiates some of the still-asserted claims of liberal and general education. A car factory that decided to close its paint-spraying shop or to reduce costs by omitting to fit tyres would soon be out of business. But a university can discontinue whole areas of its activity without threatening its overall viability. Indeed, where the basis of funding is only loosely coupled to numbers and to output, and where a stronger focus on a more limited range of work increases visibility and attractiveness, such drastic action may have a strengthening effect. Thus a plethora of horticultural metaphors – pruning, cutting out the dead wood – have been used to gloss recent cuts in funding and government support.

The concept of the residential community, based on ancient models, was at one time strongly promoted as an antidote to the harmful effects on student development of excessive disciplinary specialisation. Colleges and halls of residence, student villages, fraternity and sorority houses, were all seen as means whereby students who spent their days in widely separated laboratories, lecture halls, seminar rooms and libraries could be brought together as members of an educative community, broadening their perspectives through the conversation and debate generated by common rooms, common table and common leisure pursuits. In its extreme form, such advocacy placed greater value and emphasis on the impact of such experience than on the formal curriculum of study.,

In countries where for reasons of ideology, social control, educational principle, distance, and historical convention, the proportion of students in university-provided residences and controlled accommodation was large before the expansion of the 1960s, considerable efforts were made in the course of that expansion to offer more of the same. Study bedrooms, dining halls, common rooms and bars were provided at considerable public expense in both new and established universities. Attempts were made in some places to expand the residential ideal to the non-university sector. It was argued that such provision would enable students to be introduced to a way of life, in terms of standards of furnishing and decoration, amenities and privacy of which they had no previous knowledge. This would be beneficial to their education, would enable them to organise their own affairs in a manner impossible if they were still living at home; would foster mutual understanding and tolerance through being brought together with others from very different types of home background, interests and beliefs; would offer a constant stimulation to thought within the context of a community dedicated to a common educational purpose; would limit students' responsibility for domestic chores and leave them free to concentrate on their work, and would offer a training in living on good terms with others and develop "ease and poise in social relationships" (Silberson, 1960). Residence, it was asserted, was essentially character-forming. But even before the period of greatest expansion, there were signs that some students preferred other arrangements. A United Kingdom study undertaken in the fifties found that while " ... university teachers may find it deplorable that many of the students live at home with parents or other guardians, this is by no means the unanimous viewpoint of the students themselves. Nearly half of them ... consciously prefer it ..." (Eden, 1959).

Within a year or two a general trend in university residence towards simplification and more personal student management could be noted. "The tradition of large formal dinners in hall and of academic staff living in and acting as "moral tutors" is giving way before the student's desire for independence ... Emphasis on the intellectual role of universities and a playing down of the social, traditional and corporate aspects is bound to develop as the pressure of numbers grows" (THES, 1983). Such was indeed the trend. Not every country at-

tempted to provide housing on the scale demanded. They relied, at least in part, on an increase in the number of those willing to offer private accommodation. Despite efforts in many OECD countries to encourage students to live at home and to commute to a local or regional university, accommodation problems have been and remain a common feature of university life, with emergency provision having often to be made at the beginning of each academic session.

The case for providing residence is now largely utilitarian rather than moral. Its educational benefits are no longer so strongly asserted as before. The rituals of residential living have gone the way of many of the other symbols formally characteristic of university life – the ceremonies, processions, congregations and commencements. Senior members of the university, for the most part, exert very little control over the life styles and behaviour of students. The once rigid segregation of the sexes is now minimal. Only the more serious forms of anti-social conduct are the subject of any collective sanction. In a minority of elite or traditional institutions serious and self-conscious attempts are still made to integrate residence into the total experience of university study and voices are raised from time to time in defence of such arrangements, not least from outside the universities. On the evidence of the United States country statement (pp.83-86), students themselves attach more importance to instrumental and vocational values today than in 1976 or 1969, and regard the formation of values and goals and a well-rounded education as less important than heretofore.

The instrumental orientations that students show towards their studies are reflected in the scope of many contemporary discussions of universities' role and function. Despite greater vocational emphases, the great majority of university programmes, especially in Europe, do not have a direct connection with the pursuit of a particular occupation, or confer upon graduates immediate prospects of particular types of employment. What may be loosely described as the socialising, liberalising, broadening, maturing, functions of such programmes are deemed by many employers to be as important as the specific knowledge and skills they convey. Yet there is little encouragement today for academics or the authorities of individual institutions to emphasize this aspect of their role. Nor is there much expectation that the assertion of the importance of such functions would legitimate and strengthen the claims that universities make upon political support and public funds. The difficulty of enumerating and evaluating the benefits that universities confer on society in terms of personal development and socialisation is a handicap at a time of "numbers fetishism" (see Black, 1984).

Judgements on those aspects of the universities' functions unamenable to the evaluation of the market place have today to be especially rigorous, necessarily selective. Governments, in particular, feel the need to apply stringent criteria of utility to what are perceived as – and sometimes are – self-serving claims on the part of groups who are specialists in the arts of rhetoric and persuasion. In doing so, the case for the educational role of the university, the part it plays in shaping the consciousness and dispositions of the generations on which social modernisation depends, can sometimes be pushed into a subordinate position by the urgency of economic legitimation.

Democratisation; new patterns of inter-generational relationships; mass provision (especially on the open-access, low-cost basis that operates in some European humanities and social science faculties); the difficulty of legitimating public expenditure other than on directly course-related and instrumental purposes, and anxieties about perpetuating traditional elites, have arguably endangered the broader educational purposes of universities to an extent that they no longer fulfil public and professional expectations concerning their role in individual socialisation and "formation". The important moral imperatives inherent in the pursuit of science and of scholarship may not be enough. Universities may need to give more conscious attention to their wider social and moral role, to ways in which formal symbolic expression can be given to their prime missions and purposes.

Chapter 6

THE RESEARCH ROLE OF UNIVERSITIES

Of all the functions of universities it is their role in research that today receives the greatest emphasis by governments and by academics within almost all OECD countries (OECD, 1985*b*). In most, the volume and quality of a university's research effort is now the best guide to its standing and prestige. The *a priori* claim that, to be worthy of university status, an institution of higher education *must* be concerned with teaching *and* research is still a pervasive belief within academe, which constantly asserts itself in negotiations between universities, funding bodies and governments (see Jones, Lindzey and Coggeshall, 1982).

The belief that teaching and research must be closely associated represents the triumph of von Humboldt over Newman, the importance of "the invisible college" of disciplines and professions that transcends institutional boundaries and loyalties, the contribution of science to national success in war and in economic competition, and the status attached to discovery, inventiveness and originality as the highest manifestations of man's developed consciousness. It was not always so. The late twentieth century conception of a university organised according to principles that facilitate the discovery and dissemination of new knowledge about men and nature is so ubiquitous that it is easy to forget the essentially educational function of the early prototypes, their pedagogic emphases, their role as providers of *professional* training. Even today, countries such as France and Germany place most basic and strategic research in specialist institutes, linked to the higher education system by the fact that professors and lecturers occupy dual roles, holding positions in their university departments and also in the relevant research institute. Nor is high status *invariably* a concomitant of research standing. The French *Grandes Ecoles* have not had a formal research function although the volume of research with which they are associated is now increasing. Some small American universities in the liberal arts tradition do little research but have high status. Furthermore, even in those systems and institutions that emphasize research, by no means all faculty engage in it or make significant contributions to their subjects. In the words of the United States country statement:

> "It is estimated that 20 per cent of faculty in American colleges and universities pursue serious research on a regular basis. Approximately 10 per cent of college and university faculty members publish research findings in established professional journals and perhaps only a fraction of that research contributes to the growing edge of knowledge. Yet, the majority of faculty consider research to be the corner stone of their careers. If they do not conduct research of great consequence, they live by the research of their colleagues. Indeed, in the American university, research productivity dominates rewards and sanctions for nearly all faculty" (p.94).

Research and Teaching

How necessary *are* teaching and research to each other? Policy-makers and funding bodies, anxious about the effect of spreading diminishing resources too thin, are increasingly challenging the intimacy and necessity of the research-teaching relationship. As the United

Kingdom country statement emphasizes (p.27), when "student numbers are growing rapidly, research benefits if its funding is linked directly to teaching. The reverse is true when student numbers are not growing". It is not difficult to identify vested interests behind the view that research is intrinsic to the very concept of a university. The high status of research; the fear that universities without it might slip into a lower institutional league; the personal control over time and, to a diminishing but still important extent, over resources associated with creative research roles; the attractions of supervising and being helped in one's own work by higher-degree students; the real or potential satisfaction to be gained from success in competition for grants and contracts; the freedom from institutional constraint available to those with established research reputations; the chance to specialise, to choose one's own topics, can all be seen to underlie the case for the indissolubility of research and teaching, even if they are not always visible in the way in which that case is presented. Such presentation is more likely to be centred on the need for students to be taught by men and women who are themselves students of their subjects, critically aware of the state of existing knowledge within them, alert to the potentialities of new methods and ideas, preparing their own "essays" in the form of papers and articles for the journals, involved in longer-term programmes in the form of projects and books. Men and women so engaged, it is argued, are able to ensure that the content of courses moves with the times, are in a good position to evaluate the claims of particular topics and theories for inclusion in the curriculum. They are well placed through their own personal engagement in the discipline to inspire and motivate students, able to discriminate between the excellent, the adequate and the plain unsatisfactory, and more sensitive, because of their own experience, to the problems that students encounter in learning and in applying what they know.

It is admitted that not every university teacher is active in research. Nonetheless, it is claimed, there is a real if intangible benefit in being educated in the *atmosphere* of research, in an institution which places supreme value upon knowledge, in which the moral imperatives of academe – the pursuit of truth, freedom of expression, rationality and objectivity, accuracy and precision, the development of powers of critical analysis – are reflected in every aspect of the arrangements made for teaching and learning. Such an atmosphere is seen as essential not only for the socialisation of succeeding generations of academics, but of all those who will occupy positions of influence and power in society. In an attempt to bring training and research in engineering into a closer relationship, the French government has established and provided special funding for a number of specialist centres (FIRTECHS) which can draw upon the services of several universities and specialist laboratories, in such fields as new materials (Paris and Grenoble), chemical engineering (Nancy and Compiègne), biotechnology (Toulouse and Compiègne), artificial intelligence (Grenoble) and robotics (Toulouse) (Dickson, 1986).

In most countries with a university tradition influenced by nineteenth century German examples and without separate research-institute arrangements, these arguments have long since been incorporated into the organisation of academic institutions and into funding. In countries where a core group of universities with high research productivity, well developed graduate schools and large post-graduate outputs exist, such arguments are today scarcely challenged. But research is expensive. The "sophistication factor", which leads to increasing equipment and consumable costs per employed researcher, is making it more expensive still. Governments and funding bodies are sceptical of their ability to sustain an adequate research base in every one of a national total of universities swollen during the boom years of higher education development in the 1960s and early 1970s. Open access, participative governance and policies of regional equality have produced anxieties about mediocrity in many OECD countries. In Germany, for example, there have been calls (supported by members of the federal government) for greater differentiation.

"The intellectual sparks which glitter in the stimulating atmospheres of Harvard and MIT, Tokyo or Kyoto, Oxford or Cambridge, are extinguished here in the ashes of prevailing mediocrity. Researchers, able to achieve the extraordinary when working at a top class university abroad, achieve only the ordinary on their return to German universities" (Wild, 1984).

In France, there is continuing concern about the large numbers of students who fail to complete first-cycle studies, the poor employment prospects of graduates who have not followed technically or professionally-oriented programmes, and the consequences for the standing of universities.

"Can the French universities give birth to a small number of institutions of great intellectual distinction in which a high level of learning without professional objectives can be offered to students of high quality? This non-professional contribution to the education of elites is an irreplaceable function of the university. But it requires stringently selective procedures with regard to admissions ..." (Girod de l'Ain, 1979. See also Lévy-Garboua and Orivel, 1982).

It is clear that in the face of resource constraints, international competition and the dangers of a slide into mediocrity, actual and potential differences between universities within national systems are today receiving greater emphasis.

All this has led some policy-makers to argue that whilst it may indeed be the case that the role and function of *some* universities cannot be fulfilled without research and teaching across a wide disciplinary field remaining in close association, with all the implications this has for academic organisation and funding, perhaps not all universities have, or should have, the *same* role and functions or undertake the same range of research activities. On this view, there is nothing incongruous about using the term "university" to describe an institution devoted almost wholly to teaching, the synthesis and dissemination of existing knowledge, and contract work for industry. It is argued that for some institutions, it would be better if overall responsibility were not to "research" as such but to what the National Advisory Body for Public Sector Higher Education in the United Kingdom (1983) has called "Updating Study".

"'Updating Study' refers to all activities of academic staff designed to *improve their knowledge and understanding* of their own subject area or to develop their knowledge and capabilities in new areas. This includes greater understanding and skills in the teaching of their subject and is central to the staff development function of institutions. Staff activity on updating often generates ideas for research".

It is also maintained that pressures on academic staff to engage in research, especially in the less prestigious and well-funded institutions, can diminish the attention they are able to give to teaching and its improvement, narrow their interests in ways that reduce their competence in some parts of the courses they teach, and offer a false model to a student body most members of which will not follow an academic career and who will need to apply their hard won knowledge in practical settings.

Concentration and Selectivity

Many OECD countries have in recent years made policy commitments to *concentrate* research resources in favourable environments where there is scope for the disciplinary interaction characteristic of current priority fields, (e.g. biomedical engineering, information technology, energy management studies) where "well-founded" laboratories can be provided with

the latest equipment and technical support, and where research management, monitoring, evaluation and performance are all of a high order. In so acting governments and funding bodies have in many cases been able to build on a *de facto* differentiation of universities with a majority of research funds going over the years to a minority – sometimes a very small minority – of institutions. For example, the Australian Government decided in 1980 to set up ten high-level research centres in existing universities which already had strong research reputations, with a special allocation of money and a monitoring requirement which would enable the results of the scheme to be properly assessed.

The extent within national systems of differentiation between universities is now a significant dimension in the comparison of research activities. Other relevant dimensions include the proportion of gross domestic product devoted to all types of research and development work; the way in which that proportion is shared out between what is conventionally regarded as basic, strategic, and applied research; how much of each type of work is done in universities, as compared with e.g. specialist research institutes, government departments, the private sector and non-university institutions of higher education; the numbers of research staff employed in universities, and their terms of engagement; the sources of funds available to universities in support of research, and the *trends* in each of these dimensions, e.g. in the significance of the university's contribution to basic research as compared to that of government and the private sector (OECD, 1985*b*).

In nearly all countries, university research is based on some kind of dual support system, i.e. the research "floor" is included in basic institutional grants, and may be numbers-related, whilst the projects and programmes that stand upon this "floor" have to be erected with specific government, research council, industrial or Foundation grants and contracts. There are marked differences, not only between but also within systems, but even within individual universities, in the proportions of total costs accounted for in basic and specific grants. The basic grant to the university is sometimes assumed to cover all the necessary overheads. Elsewhere universities are expected to cost these as elements in the grants that they obtain from the contracts into which they enter with the bodies that provide funding.

When the floor of support is numbers-related, research benefits from institutional and system growth. Equally, it suffers when numbers decline. This has been a source of considerable anxiety to many national authorities, who are worried about the capacity of the research floor to support the weight of projects and programmes that it bears. An illustration of such concerns is provided by the creation in the Netherlands of the so-called Jobs Funds Model, agreed between the universities and the Ministry of Education and Science, and designed to protect high-quality research from the consequences of current and impending reductions in overall levels of university funding. A similar purpose is being served by the United Kingdom University Grants Committee's policy of selectivity in research funding.

Attempts to introduce greater selectivity in the apportionment of research support implies more systematic planning and a more overt emphasis on research policy. The growing costs of higher education in general and of research in particular, pressures on public expenditure, the difficulties that collegially-governed higher education institutions have in responding to officially-identified urgent national needs and priorities, and shortages of research manpower in areas such as information technology and space research combine to undermine confidence in the ability of the academic system to deliver the required "results". Even so, it has not always proved easy to persuade universities of the importance and practicality of developing their own research plans and policies. The Finnish country statement (p.4) alludes to this:

> "In the late 1970s diminished research opportunities in the universities and the strengthening position of the Academy of Finland gave rise to the need to improve the research possibilities of the universities. The means used to achieve this included a

programme for the development of research resources, with a special emphasis on research prerequisites of the universities. In addition to the programme for increasing research allocations, special attention was paid to the planning of the Universities' own research policies ... In their programmes the Universities enumerate the weak points in their research finance, facilities, staff, etc. And although the programmes do give indication of the general direction of research, only a few universities have defined priority areas for their research."

Dual funding; concentration and selective support consequent upon anxieties about fragmentation, duplication and the sub-critical size of some units; an emphasis on planning, the development of research policies and the systematic evaluation of research outcomes all feature strongly in discussions on research in OECD Member countries today.

External and Industrial Support for Research

Two other policy thrusts deserve mention – a stronger emphasis on external support, and more co-operation with industry. Several governments have been keen to reduce the proportion of university resources dependent upon public funds. Universities, it is argued, would gain in freedom and autonomy if they could become more self-supporting. Such a view is not held uniformly across OECD countries. In some, e.g. the United States and Japan, privately-funded universities already constitute an important element in the higher education system. In most, however, higher education is a public responsibility, and all or nearly all universities are supported from the public purse. Fees are modest or non-existent, private endowments uncommon. Yet in nearly all countries, governments encourage private-sector support for research. In Canada, where all universities are publicly funded, but where nine out of the total of seventy-one collect no less than half of all the specific research funds available, there has been a marked increase in university income from sponsored research. In the decade up to 1983 it grew by a factor of 3.5, from 193 million to 672 million dollars. In the United States there are some one hundred universities, out of over two thousand, that individually do more than 20 million dollars worth of sponsored work annually. In the United Kingdom the proportion of research funds that come from industry increased by 21 per cent in 1984 alone.

The desire to create closer links between universities and industry has had more to do with encouraging innovation and economic growth than saving public funds (ABRC, 1984).

"Such links make available to industry the knowledge, expertise and facilities in the institutions and so enhance its capacity for innovation and improvement. They also benefit academic researchers who can participate in the application of their ideas and may thereby be pointed towards other research areas of national importance. This may provide them with a wider range of challenges and can enrich teaching, through experience of current industrial practice" (p.7).

The relationship between pure science and technology is more complex and involves more reciprocal elements than was assumed by those involved in the institutionalisation of research in the post-World War II period. In a discussion titled "Has Science Created Technology?" Keller (1984, p.182) has concluded:

"There are so many diverse sciences and so many diverse technologies that no generalisation covers them all; the relationship between civil engineering and geology is quite different from the relationship between chemical engineering and chemistry, or between nuclear physics and nuclear engineering. Plainly, most types of scientific endeavour needs someone who has a practical skill in the manipulation of material and he is seldom an original theorist. Most technologies are created by individuals with a clear

understanding of a wide range of scientific facts and their implications. To suppose, therefore, that one form of human activity is directly dependent on the other, still less its intellectual offspring, is not a sensible deduction from the immense variety of data".

Whatever the history and the motive, there is no doubt that many universities are today playing an increasingly important part in the provision of research expertise and of high-level education and training for industry, commerce and the professions nationally and in their own areas. Their presence can also act as a catalyst for the establishment locally of research groups and development centres which draw upon faculty expertise and specialist facilities.

In a number of countries, universities, often with the support of national, regional and local governments, are making efforts to secure a higher level of interest in their affairs from corporations, including financial support. In the United States, which is often thought of as the country in which such relations are more highly developed than elsewhere, there have been recent calls for new and innovative forms of business/higher education relations. Although the absolute size of corporate aid to colleges and universities is now higher than it has ever been, such aid as a proportion of all higher education budgets has fallen from nearly 2 per cent in the early 1960s to only 1.2 per cent in 1982/83. Such support takes many forms – grants to universities, financial support of students, co-operative education (known elsewhere as "sandwich courses"); consultation, attendance at seminars, and access to faculty and publications, known as "corporate associate and affiliate programmes"; bilateral and consortium research agreements; training programmes; conferences, colloquia and symposia; internships and sabbaticals; faculty and staff exchanges; voluntary participation in governing bodies; availability of university facilities; the employment of graduates, and joint projects to address national problems. New and expanded relationships in providing expensive equipment for universities, broadening the basis of student assistance, more sharing of staff, further utilisation of college and university resources for corporate purposes, employee training, contract research, library resources, computer facilities and the upgrading of physical plant have all been called for.

Many efforts of this kind, although inspired by national need and priorities, take place at local level. Links are formed between a university and neighbouring centres of industry, professionals active in the community become involved in university affairs, faculty effort is organised to help solve problems encountered in design, production and marketing.

The creation of "science parks" in some countries, immediately adjacent to universities, is a significant recent development. Industrial groups value sites close to the laboratories and offices in which basic and strategic research is being undertaken relevant to their own interests. The staff of these enterprises often make valuable contributions to the teaching and research of their neighbour university, and faculty are given consultant status in the undertaking. Particular emphasis has been given in fostering such links to the role of the silicon chip, and research on recombinant DNA and its biotechnological applications. In some cases, universities have set up private companies limited by guarantee, to provide the type of managerial competence and organisational structure that enable appropriate relationships with industry to develop. Full-time staff employed by the company can then act as intermediaries between university faculty and entrepreneurs, and the university, as such, can avoid becoming embroiled in commercial relationships that might not be consistent with its academic purposes. Ashworth (1984) has indicated some of the complexities in these relationships.

i) "Universities and industry have quite different priorities and seek different outcomes from the relationships;

ii) University and industry have a quite different legal status and thus very different management and decision-making processes, and thus;

iii) Individuals in the industrial world and individuals in the academic world have quite different motivations, expectations, priorities and criteria for what they believe to be personal or institutional success" (p.5).

The President of the German Professors' Association has warned that universities are in danger of being reduced to "useful servants", the political parties regarding them as machines "in which you put DM100 and expect DM200 to come out at the other end after six months" (von Ow, 1986*a*).

In Australia an important middle- and long-term problem is posed by the nature of the contractual relationships into which universities enter.

> "Some universities already have secured substantial research funds from the private sector and, especially for work in the biotechnology areas, have entered into new forms of contractual arrangements giving the clients specified rights over the results. Such developments have raised issues concerning the role of universities and research, the ownership of research findings, and the responsibilities of university researchers to society and to the traditions of independent scholarship." (Country statement, p.29).

Such problems are not limited to applied and developmental work. They may be even more significant in respect of industrial support of basic research. The need for industrial secrecy and the protection of discoveries may be inconsistent with university imperatives of academic freedom. Traditional systems of quality control by means of peer review require the widest publication and discussion of results.

> "A still greater danger is that research initiatives could shift from the individual scholar to the corporate manager – and that the professional future of the scientist might be linked more to an ability to please the patron than to his or her ability to ask important questions. The involvement of commercial organisations in university-industry research is potentially compromising; yet many expect it to increase" (U.S. country statement, p.106).

Only a minority of departments and institutes are in a position to play an active part in industrially-sponsored work, and to offer saleable consultancy services. Two consequences have followed. First, the range of what is acceptable activity on the part of a university scientist has widened.

> "The conception of the scientific role has become more flexible and more capacious. Some of these new activities have been incorporated into the scientific role; the undertaking of some activities has required movement out of the role while others have had little or no effect; the scientist remains a scientist and is accepted as such even though he does things which were once not regarded as compatible with being a scientist. Practices which were once marginal to the scientific role have now become much more widely performed and generally approved" (Etzkowitz, 1983).

A second consequence is the emergence of a sharper division of interest between staff who can exploit their professional knowledge on behalf of the university and those who cannot. Such divisions have always been present in one form or another; opportunities to supplement personal or departmental income through "private practice" have been much greater in medicine and engineering than in the pure sciences, humanities and most branches of social science. In some countries (e.g. Spain and Italy) many staff have been employed on a part-time basis, on the assumption that they will also have earnings from other sources. In the United States and Canada there are many examples of "nine-month contracts", with separately remunerated Summer-session work as an optional extra. Many universities have set limits on the amount of outside work that an academic may undertake. Current develop-

ments are of a different order. Entrepreneurial activities receive official and institutional encouragement and university facilities are freely available. The sums involved can be very large. The connection between a staff member's work on behalf of a firm with which he has a contract or for a university-owned trading company, and his departmentally-based research is much closer. Resources for the latter may be dependent upon external industrial support. Such support may itself turn on the company maintaining a comparative advantage in the market. All this can give rise to conflicts within an academic culture hitherto based on serendipitous contacts between scientists, the early publication and sharing of results and the absence of secrecy. Internal clashes over the distribution of resources may also be sharpened. Individuals and departments may assert claims on the basis of their entrepreneurial track records or potential, arguing that the viability of the university, and the future of commercially unproductive departments, rests upon their resource demands being met.

In these circumstances, it is unsurprising that extensive debates have taken place in some universities about involvement in particular kinds of research which have industrial and commercial applications, and that complex rules now exist governing the nature of contracts and the involvement of staff in outside work. Anxieties remain, however, that, at least in some of its subject areas, the academic freedom and independence of the university will be endangered by direct ties with the worlds of making and selling such as are now developing, and that whatever the short-term financial or commercial gain, the divisive effect of such work within the academic community will damage the longer-term interests of the university.

Given the high status and visibility attached to success in attracting research and development support from industry, and the importance of such funds when government money is "cash-limited", there is always the possibility that some academics and departments may devote more time to negotiating and undertaking contracts than to their more traditional research and teaching functions. For this to happen on a large scale would undermine the long-term economic benefit that the university can confer on society. Some governments currently appear to be offering selective support for work in informatics, biotechnology and related fields which is intended to support the training and industry-related activities of universities that have already achieved reputations in these fields. But the frontiers of knowledge in such subjects tend to expand very rapidly, and in some cases the full exploitation of discoveries made in university laboratories requires resources that universities themselves cannot command. In the words of a recent OECD (1984) study:

> "Some very large firms are intensely involved in research and development at the forefront of their respective technologies: their facilities for research, their investment in it, the calibre of the scientists they recruit are generally comparable – and often superior – to what is available in the universities."

For universities to devote their efforts to research and development work of a kind that can more readily, and with better chance of success, be undertaken by industry, is to waste the opportunity that university scientists have to explore the fundamental issues that will be reflected in the next generation of technological development. Such exploration does not readily satisfy the criteria of contemporary investment appraisal. The risks are high; projects fail, pay-offs are long-term. The claim of all universities to be funded for such high-risk work is increasingly challenged. A higher proportion of the total funds available are now being distributed on a selective basis, with the inevitable result that some universities are much more attractive than others to able scientists and research workers. There is a growing differentiation of role and function between universities within the same system, with only a minority able to devote substantial resources to "big science" and other fundamental research, and the remainder undertaking a larger proportion of training and development activities. In the long term such policies have to be administered and monitored with great

sensitivity. Mobility within the academic profession is not always such as to ensure that the best people do flock together in the right places, and just as the reputations of particular departments have waxed and waned in the past, so are they likely to change in the future.

There is one particular in which two OECD countries differ from nearly all the rest, namely the proportion of their total research and development effort that goes into defence-related expenditure. The two countries are Britain and the United States. In the United States, a "large and growing share" of the money available for research is spent on defence-related work. About half U.S. spending on basic research is in the medical and life sciences. This is a somewhat higher proportion than in Canada, for instance, where the Medical Research Council spends about 30 per cent of government funding for research, and the United Kingdom, where the medical share is 21 per cent, compared with 50 per cent for the Science and Engineering Research Council, 12 per cent for the Natural Environment Research Council, and only 4 per cent for the Economic and Social Research Council (ABRC, 1984).

The research potential of universities in OECD countries has in many cases suffered through reduction in job opportunities consequent upon financial and demographic pressures. In many fields, intellectual frontiersmanship is seen as the province of the young, although this is by no means always the case. The effect of contraction and retrenchment has been to reduce the mobility of the very groups amongst whom it is most needed – the younger research staff. In the words of a former Chairman of the Royal Society of England and Wales (Todd, 1979):

> "The economic stagnation of recent years has all but staunched the flow of academics in mid-career into other occupations. Many young scientists are seeking to retain their present precarious positions by hand-to-mouth grants because they fear that a change to another university or research institute might jeopardise their chance of obtaining a permanent appointment."

In France, special efforts have had to be made to reduce promotion blockages among the staff of research institutes, involving wholesale upgrading. In *Denmark*, the promotion of academic mobility has been a cornerstone of recent government policy, and has featured largely in the restructuring of the academic profession. In the *United Kingdom*, special short-term "New Blood" schemes have been introduced to ameliorate the loss of an academic generation such as might result from the post-1981 cutbacks in university funding.

One of the consequences of reductions in university funding has been to make posts in non-university institutes of higher education more attractive to well-qualified men and women, some of whom want to be actively involved in research. Although Polytechnics, *Fachhochschulen*, Regional Colleges, Community Colleges, Colleges of Advanced Education and other non-university institutions of higher education have no formal research role, there are signs of their increasing involvement in research. In Australia, for example, government has provided modest funding for "key centres" to be established in CAEs. In the United Kingdom the National Advisory Board, which makes recommendation on the distribution of funds to non-university higher education, has recently proposed the allocation of specific sums to provide a research "floor" in a number of polytechnics and colleges which have been successful in obtaining external support for their work. In Japan, research in fields like home economics, health, and education is carried out on a quite extensive scale in non-university colleges. In most countries, however, the total amount spent on basic and applied research in non-university institutions remains modest.

Chapter 7

UNIVERSITIES AND THE ECONOMY

From their earliest days, universities have had a role in educating and training for subsequent employment. In pre-industrial society, their graduates went mainly into the Church, the law and public service. The coming of industrial society enormously increased the size and complexity of the market for educated labour, to which universities responded to a greater or lesser degree according to their traditions, the attitudes and encouragement of the State, and their perceptions of what constituted the most appropriate preparation for particular careers. Many of the universities founded in the late nineteenth and early twentieth century had scientific, technological and industrial origins, although in many cases their achievement of full university status was accompanied by a broadening of scope, and the recruitment of larger proportions of students in the arts and social studies.

The Employment of Graduates

The idea that university courses, other than those specifically oriented to the practice of a particular profession such as medicine, veterinary science and education, should be justified in terms of vocational and employment considerations has been perceived by many academics as a threat to the values of a general and liberal curriculum. Indeed, the very word "academic" is often synonymous with lack of practicality. Such attitudes have survived the demise of generalist programmes and the triumph of specialist subject degrees and diplomas. In some countries, the task of responding to the employment "signalling system", and to other than the high-status professions, has been left to the non-university sector, and to other agencies outside the formal education system.

The ability of universities to keep the labour market at arm's length in terms of course design and balance of studies, yet to enjoy high rates of graduate placement in satisfying and well-rewarded positions, turned on selective entries, modest rates of participation in higher education, and virtually full employment. The intelligence and personality attributes of highly-selected graduates were attractive to employers, held out promise of rapid learning and early competence, even in positions which required specific knowledge and skills, and ensured a high level of demand for entry to the university programmes that produced such graduates.

With a larger proportion of the 18-24 age group experiencing higher education, with the knowledge content of jobs increasing, and with full employment no longer the norm, support for programmes in the pure sciences, the humanities and the social sciences has weakened. In the words of the U.S. country statement, "careerism, pre-professionalism, occupational programmes have put general and liberal education on the run" (p.10). Higher rates of unemployment make courses that have a clear vocational destination more attractive, especially when the size of entries is adjusted to subsequent openings in the labour market.

The existence of a higher proportion of professional and vocational courses within universities has consequences quite apart from those of graduate employment. Such programmes bring more accrediting bodies on to campus, and increase the influence exerted by non-university agencies on distribution of resources, staffing policies and other aspects of academic governance (Carnegie Foundation, 1983; Boyer, 1985*a*).

The extent of current graduate unemployment must not be exaggerated. Most OECD countries experienced economic recession in the 1970s. Some have recovered more quickly than others. In nearly all, however, overall unemployment rates are higher than before the "oil shocks" and the subsequent high levels of inflation. Despite this, the job prospects of university students remain considerably better than those of their less well educated contemporaries. *In Australia*, for example, unemployment among university graduates is well below that for the adult labour force as a whole, with a rate of about 6 per cent in any one year between 1978 and 1982. A survey undertaken by Sydney University's Careers and Appointments Service (Maslen, 1985) showed that more than 30 per cent of graduates were employed directly by governments at local, state or federal levels, and another 27 per cent went into education, illustrating how vulnerable graduate employment can be to changes in public expenditure. Students of agriculture, the sciences and (with the exception of economics) the social sciences showed the most significant unemployment rates, whilst engineers, economists and lawyers were still, for the most part, easily placed. A somewhat similar position obtains in *Canada* where only 10.5 per cent of the 15-24 age group with a university degree were unemployed in 1984, against 14 per cent of those who had completed community college, and 21 per cent of those with no more than a completed high school education. Opinions about what level of graduate employment constitutes market "saturation" vary from one country to another. In *Switzerland*, for example, with just over 5 per cent of the population holding a university degree or equivalent qualification, there are anxieties in some quarters about employment prospects for graduates, with some already occupying jobs which could be satisfactorily performed by people with less education (McGregor, 1985).

It is interesting to note that in response to a question about the extent to which universities were "meeting the manpower needs of society", the Canadian authorities replied:

> "To even pose the question about the extent to which manpower needs are being supplied by universities is a challenge to the conception and role of higher education as perceived by a significant number, and perhaps even a majority of academics. However, there is a growing awareness on the part of the students about the marketability of their degrees" (Canadian country statement, p.34).

This statement underlines the way in which student choice is an important element in university planning. As the U.S. country report notes, control of the curriculum has to some extent shifted from academics to students. This trend may well become more significant in all OECD countries which experience demographic downturn in the remaining years of the 1980s and early 1990s. There is likely to be more competition among institutions for high-quality entrants, and thus greater willingness to respond to what are perceived as student preferences.

In the *Netherlands*, too, whilst unemployment among university graduates has increased sharply over the past ten years, from less than two thousand still looking for work in 1973 to over fifteen thousand in 1983, job prospects of graduates are still very much better than those of the labour force as a whole, the difference being between 7-10 per cent for graduates and 17 per cent overall.

Another consequence for universities of higher rates of graduate unemployment is pressure for what the *German* country statement calls "extra and supradisciplinary qualifications".

"The reference here is to social and communicative skills, to general behaviour and capacity for motivation, but also to 'manual and instrumental' skills such as typing or a knowledge of how to handle information-processing equipment, including a knowledge of how to handle the corresponding organisational work flows and processes" (German country statement, p.17).

It is reported that the graduates of *Fachhochschulen* now enjoy better employment prospects that their university educated contemporaries, and that the percentage of such graduates who ended up in jobs previously occupied by university graduates rose from 7 per cent to 12.5 per cent between 1978 and 1982 (von Ow, 1984).

In recognition of this, some universities now offer all students, whether in the sciences, humanities or social sciences, opportunities for second-language learning, the acquisition of computer literacy and other skills that enhance employment prospects.

Similar influences are at work in the growth of study programmes which extend beyond the first degree or diploma, deepening knowledge in specific fields acquired at earlier stages, or applying such knowledge to a variety of practical fields.

Although in many countries the effect of more restricted employment opportunities has helped reduce the number of students who drop out from their courses before completion, this is not uniformly the case, and in any event, care is needed in interpreting what "completed studies" now means. In the United States and Sweden, for example, a proportion of the entry is of men and women who wish to pursue one or two courses selected from a full-degree programme, usually with vocational intentions. Furthermore, the fact that an individual abandons a full programme of study before qualifying for the award of a diploma and degree does not always damage employment prospects. Specific studies of this problem have been undertaken in Spain, where it has been found that the abandonment of studies is less frequent than is often supposed, "but moreover it also does not have the individual and social consequences that could be supposed, since in most cases employers do not consider a title as an indispensable or even a preferential condition when they come to take on staff" (Spanish country statement, para. 4.2.1.1).

Although few OECD countries make systematic attempts at manpower planning beyond occupations such as medicine, dentistry and school teaching, much work continues to be done in collecting, analysing and interpreting data on the needs of the labour market as perceived by employers and policy-makers. Whilst general shortages of highly-skilled manpower are now rare, problems remain in specific fields. There is virtual unanimity in the country statements as to what these are. Information technology, "informatics", biotechnology, management science, marketing, laser technology, telematics, materials science, feature prominently in the lists. Given the imperfections of the market signalling system, and the difficulties that universities have in responding to such signals when confronted with demographic and economic pressures, some governments have made direct interventions by the support of "New Blood" posts in specific fields, the provision of larger numbers of research studentships, the diversion of funds to research in fields of national importance, and the earmarking of finances for use by specific academic departments and units.

Expectations of Students and Employers

A large-scale research study of employers' expectations in the United Kingdom showed just how complex were relations between the needs of the employment market and the conceptions of employers and students respectively. In Kogan's words (1985) "employers, institutions and students themselves "sponsor the degrees of freedom to which higher education now meets the needs of the employment market". Kogan goes on:

"Thus employers look to higher education to select able young people for them. They also look to higher education as the primary source of training in some specific knowledge and skills for particular occupations. But they support educational experiences which, almost irrespective of the course of study, create flexibility, enhance personal development and build up individual motivation. And what employers and institutions want seems, at minimum, not to be in conflict with what students want".

Attempts to strengthen the linkages between the content of higher education courses and occupational performance take three main forms.

First, there have been efforts to analyse the job requirements of various occupations, and to design courses closely tailored to these requirements. This is very difficult when there is significant unpredictability and variability in the tasks involved in the performance of an occupation. Since universities generally prepare people for levels of work that are non-routine and require the exercise of personal initiative, attempts to gear course content closely to job performance tend not to be very successful.

Another strategy is to build curricula round a core of skills and knowledge deemed to be relevant in a wide variety of tasks and occupational contexts. As we have seen, an increasing number of universities are now offering all their students, irrespective of subject, opportunity to acquire a minimum knowledge of how computers work.

A third approach, and one which seems to be supported by the views of employers and students in Kogan's study, relies on developing the powers of the mind and strengthening dispositions favourable to subsequent success, that is to "inculcate attitudes favourable to hard work, team effort, conscientiousness, accuracy, responsibility, personal ambition, trainability".

Apart from the obvious reasons why the third strategy may be preferred – imperfections in the labour market, employers' inability to define and predict their requirements for qualified manpower, specific in-house training provision by employers for that large number of tasks for which short periods of preparation are required, recognition of the high levels of mobility between occupations – there may be other factors which derive from the hiring and promotion policy of large enterprises. If hiring is the initial responsibility of a personnel specialist, who sifts a large number of applicants for perusal by his or her seniors, the short list can be more easily justified in relation to good honours degrees from high-status institutions than in relation to more specific but less visible criteria. Current employment legislation confers high job security. If it is difficult for those who have been hired to be dismissed, there may be advantages in creating a pool of junior staff with general competence, from which a further selection can be made later for specialist tasks that need to be performed within the company.

One effect of the publicity accorded to studies of employers' preferences and labour market shortages is to add to universities' sense of vulnerability by providing politicians and opinion-formers with "evidence" of the alleged failure of universities to fulfil what is assumed to be their social and economic function. The combined effects of freedom of information, the politicisation of many educational issues, the heavy demands that education makes on national resources, anxiety on the part of governments in the face of intellectual criticism (especially in the wake of the university troubles of the late 1960s and early 1970s), expose universities to public attention and make them much more sensitive to comment and criticism (Scott, 1986). An increasing number of universities have followed North American practice in establishing departments of external relations and appointing press and information officers. Industrial and commercial organisations have themselves been under pressure from governments to improve productivity and export performance, and thus have not been reluctant to find fault with their major suppliers of manpower – the schools and universities. For

example, the Spanish State Secretariat for Universities commissioned a study on management staff of one hundred and fifty-four companies about the qualities and skills needed by graduate entrants. There were widespread criticisms on the part of company managers. They felt – and theirs is a very common complaint – that the preparation graduates received was far too theoretical and non-practical. New entrants lacked the ability to apply and to use the knowledge they had acquired, which was in many cases too general and not up-to-date in relation to new knowledge and technology. Improvements in the quality of up-to-date content in university courses, and for a greater measure of specialisation were called for. At the same time, senior managers felt that their younger contemporaries lacked understanding of man-management and human relations, and had little appreciation of the "company as a dynamic entity" (Spanish country statement, p.418).

Such findings could be repeated for several other OECD countries. Universities are sometimes critical of such surveys, on the grounds that the needs identified by industrial managers and directors are those of today (and even of yesterday) rather than tomorrow; that factors other than the formation of new entrants enter into productivity; that industry does not always deploy its available labour force in the most intelligent way, and that too few resources are devoted to in-house training and staff development. Universities are also ruefully aware that in an age of greater accountability, their highly-diversified structure and variegated product invariably offers targets on which external critics can score.

The argument that demands for highly-qualified manpower such as universities provide will not be affected by demographic downturn has been used by universities in some countries to defend their share of government spending. It is by no means clear, however, that the explosive growth in "high-tech" professional and managerial employment that has characterised the last two decades will continue into the nineties. In the United States, growth in professional and managerial occupations during the 1960s was 36 per cent, and between 1970 and 1980 45 per cent. The corresponding figure for the present decade is 28 per cent (U.S. country statement, p.89). Clerical and service occupations, for which on the whole universities do not prepare, are estimated to account for 40 per cent of future employment growth, thus maintaining the rate that was achieved in this sector between 1960 and 1980.

An important consequence of higher overall rates of unemployment has been that university graduates are now occupying positions formerly filled by high-school leavers and those with lower levels of educational achievement. In the words of the Netherlands country statement, "posts which used to be filled by people with a junior or senior secondary vocational education are now regularly given to graduates because employers are imposing higher standards" (p.30). This was one of the aspects of higher education growth studied in the 1970s by the Carnegie Foundation, which suggested that one outcome might be the progressive upgrading of certain levels of employment, with graduate secretaries assuming responsibilities formerly those of their executive supervisors, graduate travel agents offering a wider range of service than simple hotel and airline bookings, graduate realtors (estate agents) encroaching upon some of the functions formerly exercised by members of the legal profession who traditionally handle property exchange transactions. At the same time, however, job opportunities for the less qualified are restricted, and those with minimal schooling have difficulty in obtaining any kind of employment whatsoever. This is increasingly recognised in the existence of youth training schemes, which relieve pressure on the youth employment market, at the same time offering those who have left school at minimum age the possibility of acquiring skills useful in employment.

Any attempt to compare the relative success in the labour market of graduates from different disciplines is vitiated by lack of common categorisation. In general terms, graduates in physics, chemistry, earth sciences and technology have less difficulty in obtaining employment than those in languages, letters and the social sciences. The fact that the number of

state studentships available for post-graduate study in the humanities and social sciences has in some countries been reduced at the expense of the "hard sciences" has a distorting effect on the figures, since a higher proportion of humanities and social science graduates than heretofore are in the labour market.

On the assumption that levels of participation in higher education will not show significant change up to the end of the century, thus falling considerably short of what was being spoken about in the 1970s as "mass higher education", the overall proportion of the labour force that will have experienced university education in most European countries will remain modest. But in the United States, by 1982 about one out of every five workers had completed four or more years of college, and the proportion among the younger members of the labour force was one quarter. It has been estimated that by 1990 these figures will be close to one-quarter and one-third respectively. Thus the university in the United States is no longer associated with the education of an elite, although this remains the function of the most prestigious research-based institutions. In contrast, the majority of the graduates of most European universities still expect to obtain employment in high-status and well-rewarded occupations, and although such ambitions are harder of fulfilment than a decade ago, substantial proportions do so. The view is still widely held that an individual who has experienced a full college or university education, and is subsequently either unemployed or works in an occupation with little intellectual content, has, irrespective of the quality of cultural life, "wasted" opportunities. Higher education, of all kinds, is clearly still regarded as an investment on behalf of the individual and of society.

Universities and the Regional Economy

An examination of the location of university institutions in OECD countries shows them to be distributed widely across national territories. In many countries, the largest number of students and of institutions are concentrated in or near the national capital or in regional centres, e.g. London, Paris, Madrid and Barcelona, the eastern seaboard of the United States and California. Sometimes, but not always, the most prestigious institutions and departments are also to be found among such concentrations. In countries with large numbers of higher education institutions, such as the United States and Japan, there is hardly a major town without its university. Elsewhere, their distribution can be influenced by the structure of regional government (e.g. the Canadian provinces, the Australian states), by policies for the economic development of particular regions (e.g. the far north of Finland and Sweden) and by considerations of language, regional culture and politics (e.g. Wales and Northern Ireland within the United Kingdom). Conscious efforts to promote regional development were a significant factor in decisions to site new universities during the expansion of the 1960s and early 1970s. In some cases there was a deliberate attempt to move resources and attention away from capitals and large conurbations in favour of smaller centres. Even when universities recruit nationally and internationally, rather than regionally or locally, and when, as often in France, their links with local communities are tenuous and indirect, they still perform functions of great importance to the regions in which they are located (OECD, 1982).

First and foremost, the presence of a university confers a valued measure of intellectual and social status and recognition. The pursuit and dissemination of knowledge is never a wholly secular business, and the presence of a university in a region or locality adds to the legitimacy of the other activities that go on there. University work has been, and sometimes still is, carried out in poor buildings and under conditions of physical difficulty; and plain living is still often associated with high thinking. But this is not the norm. Most universities

are housed in buildings more distinguished than most in their locality. Usually purpose-built, their design both reflects and serves to shape the educational ideology that informs and inspires academic purposes. However instrumental and vocational the curriculum pursued in lecture room and laboratory, the institutions themselves testify through their libraries, musical and dramatic offerings, the acquisition and display of art works, and the form of their social organisation, to a wider conception of culture, and one which civic fathers and regional authorities traditionally value. It is these reasons, as much as direct economic advantage, that accounted for regions and municipalities competing vigorously with each other to be the site of new institutions created during the rapid growth of the 1960s.

Not that the perception of economic advantage was unimportant. Universities are large-scale employers of labour. O'hEocha and Watson (1984), drawing upon a German study contributed to an OECD workshop suggest that:

> "When a new university is established in a region it has an immediate impact which can be accurately quantified. In addition to the immediate employment effects there is the demand for goods and services and student expenditure which creates other jobs in the region. A 1977 German study estimated that for each 10 000 students there were 3 000 highly qualified university jobs while spin-off employment amounted to 4 300. This multiplier of 1.43 is more than that of industrial development".

In some countries, there are whole communities almost completely dependent on a university for their economic survival, towns where the population is reduced by half during vacation periods in which students return to their own homes. It is not unknown for a university to be the largest single employer of local labour – cooks, caretakers and cleaners as much as the academics who come to work in the departments and laboratories. The money that students bring with them supports numbers of retail outlets, and generates demand for a wide variety of personal services. Out of term, the availability of low-cost accommodation in dormitories, halls of residence and colleges attracts conference and holiday business, thus representing an all-year employment potential. The running down or closing of an academic institution is a threat to the jobs of many more than the directly employed academic, administrative, technical and support staff. For locally elected members of national or regional legislatures, these wider employment consequences of contraction or closure can be a more compelling source of interest and support than the possible loss to scholarship and science of the teaching and research that the institution undertakes. It has been ruefully admitted in some places that the most certain way of making a university popular in its region is for central authorities to threaten the scale and perhaps even the continuation of its activities.

In cases such as Oulu in Finland (Mannerkoski, 1985; Blume, 1985) the decision to establish a university in otherwise "underprivileged areas" has been part of regional development policy, designed to foster the economic and cultural development of an area, to increase the participation rates of its youth, to make available larger numbers of trained personnel who might be employed in its industries. Sometimes there already exist in such an area a number of academically-related institutions which provide support for the establishment of a university. In Tromsö in north Norway, before the setting up of the University at the end of the 1960s, there was an auroral light observatory, an agricultural test station, a museum of cultural and natural history, a central hospital, a teacher training college, a regional microbiology laboratory and the meteorological station. Sometimes, as in the case of Tromsö, it is necessary to provide favourable contracts and working conditions in order to attract well-qualified staff from areas with a less extreme climate. Such measures include the provision of high-quality equipment, generous allowances for travel, the availability of sabbatical leave for one year in every five for all permanent staff, and the availability of relatively low-cost housing.

As well as affecting the economic prospects of a locality or region, the presence of a university makes services available to agriculture, industry and commerce that might otherwise have to be obtained commercially, if obtainable at all. Professors and lecturers are drawn in to advise local enterprises on matters within their expertise, are engaged as consultants by industrial firms, appointed to the regional or local boards of national undertakings. The presence of a university also stimulates the foundation and development of science and technology parks. Many academics welcome such contacts with local industry, especially when their research and scholarly activity require proving grounds, industrial trials, and other facilities for "action research". The importance of such relations, and of the capacity of the university to link local and regional industrial interests with national and international networks of knowledge and experience has grown as economic competition has increased.

> "Although industry still expects the universities to focus their primary efforts on the training (and re-training) of scientists and engineers, academic research is increasingly seen as offering specific opportunities which call for co-operation. Long-term national and international 'megabuck' research deals, close integration of industrial and university teams, new demands for university initiatives in the diffusion and application of research results, increasing involvement of academic scientists and engineers of all disciplines in regional development – are some of the main new features of present trends" (OECD, 1984, p.9).

There can be parallel consequences for local or regional government. Indeed it has been alleged that the political life of some municipalities in which universities with large arts, laws and social science faculties are located is much influenced by the participation of academics in local affairs. There are many kinds of academic expertise which are of great value to bodies like regional hospital boards, economic development councils, to the magistrates bench and to the school board.

Important as all these are, a university does much more than this for its region. It offers a model of what such an institution is, of what it means to pursue studies in higher education, of the nature of academic life about which citizens and potential students might otherwise have only an indirect and less concrete impression.

There is no reason in principle why research and teaching activities directed to the particular concerns of a region should not also enable the universities in which such work is undertaken to obtain national and international recognition. A university situated on the estuary of a large river, for example, may develop a centre for esturine studies, embracing work in a variety of disciplines, focused on the scientific, social and cultural features of its own area. Such a centre may encompass basic studies in such subjects as fish physiology, esturine geology, and flood defences. The bringing together of such departmentally-based work within a centre is by no means unusual, and reflects the matrix-type organisation of disciplinary effort proposed by Lynton (1984) as an antidote to the excessive specialisation and failure to address practical problems that can otherwise characterise the continuing sub-division of specialities. But as Blume (1985) has pointed out, what local industry asks of its university can be very different from the demands of multinationals and large firms. The latter depend for major innovations more upon the fundamental research activity of major institutions than on the type of applied and development expertise available locally.

However national or international their orientation, universities customarily offer programmes of study to citizens in their locality through the medium of extra-mural, extension and continuing education classes. Marriott (1983) has argued that in some respects such efforts represent the conscience of institutions that for a variety of reasons are now *less* local than once they were:

"It would be an interesting study to collate the evidence of the process by which the new universities of the early twentieth century began to rid themselves of the vestiges of their origins as 'local colleges' ... As far as their internal social and educational environment was concerned the civic universities aspired to be less and less civic. In the search for dignity they renovated significant parts of the regime of the old, socially exclusive universities. The model of real university provision was seen ... in the intensive training of a captive group of late-adolescent students who would be brought into several years of continuous residence, who would have no necessary connection with their university's locality, and who would be insulated from the regular business of life" (p.2).

The growth of a knowledge-based society, and university expansion, have made relations between universities and the national, international and local economy both more complex and in many cases more direct than was once the case. Traditionally, many academics have resisted closer ties with their own regions and localities. High academic standing has been associated with a national and international role. The provision of services to a locality has been left to polytechnics, regional colleges and other non-university institutions. There are signs that in the face of financial exigency, demographic downturn, and policies which stress concentration on centres of excellence, some universities wish to reassert their regional identity. There appears to be no reason why this should be incompatible with the core values that justify university status, as long as opportunities still exist for each university to make such contributions to research and scholarship as the talents of its staff and students permit, and formal status categorisations are avoided.

Given the extent to which many new forms of employment are knowledge-based, university staff in relevant disciplines can be expected to respond quickly to the articulation of new labour market needs and opportunities. There is something of a lag, however, in the numbers of suitably qualified candidates coming forward from the schools for new courses and programmes of study, and, given the structures of university governance, it is not always easy for resources to be switched to new lines of work. There is also a danger that efforts to overcome these difficulties may fail to take account of the transience of labour market needs; the limited extent to which education and training of the kind offered by most universities is in fact specific to job needs; the importance of general qualities of mind and dispositions for subsequent ability to assimilate and utilise specific job training of the kind that the informal curriculum of the university helps to develop, and the importance of protecting the overall capacity of the university system to undertake or, where separate research institutes exist, play its part in the pursuit of basic research. Sometimes the emergence of new training needs is reflected more speedily in post-experience provision than in undergraduate courses.

Chapter 8

THE ACADEMIC PROFESSION

Many of the most difficult problems that arise today concerning the staffing of universities derive from the rapid growth and diversification of post-secondary studies during the 1960s and early 1970s. Large numbers of new staff, many of them beginning or at the early stages of an academic career, were recruited to teach in the expanding and newly-created faculties and departments. Such a rate of growth was inevitably short lived. Equally inevitably, it has created considerable problems during subsequent periods of slower growth, stagnation and, in some countries, actual retrenchment. These problems take several forms.

The Age Structure of the Profession

Whilst a minority of university staff, especially in some professional fields, are recruited after successful practitioner experience (e.g. in teaching, business, some aspects of legal practice, etc.) the majority of teaching and research staff enter upon an academic career in their twenties or early thirties after establishing their research credentials by means of a thesis or appropriate scholarly work. This is reflected in the status and reward structure of the academic profession in most OECD countries. In some fields, the high points of research output and scholarly achievement can occur early. Such academics, whilst continuing to make useful contributions to knowledge in their specialism, to its dissemination and to the guidance and supervision of younger researchers, have reputations based mainly on the outcome of intensive periods of research scholarship undertaken during the first phase of their academic careers. Thus both for reasons intrinsic to the academic enterprise, as well as to institutional health and vitality, it is important to maintain an appropriate age balance within the profession. The effect of a relatively short period of very rapid expansion has in some subjects been to create severe bunching in the third and fourth quartiles of the academic career.

This problem can be illustrated from data provided by Member countries. In 1982 in *Australia*, for example, 78.5 per cent of professors, 68.3 per cent of associate professors and readers, and 41 per cent of senior lecturers were over 45 years of age (Australian country statement, p.34). Figures of this kind mean that, in a situation of stable or declining numbers, not only are present opportunities for new recruitment limited but a steep rise in the number of retirements will occur within the next ten years. Among those holding lectureships and assistant and full professorial and research appointments in the five largest faculties of *Swedish* universities, 25 per cent will reach retiring age by 1990 and 50 per cent not later than the year 2000 (Swedish country statement, p.40). At the present time, however, "the number of appointments falling vacant in the Swedish higher education system as a result of retirement, viz. 10 or 20 per annum in each of the major faculties, is too small to provide an adequate influx of new researchers into the higher education system ..." (p.42). In *Denmark*,

two-thirds of academic staff in universities are between the ages of 35 and 50. This imbalance is compounded by the fact that university teachers in Denmark may continue in full-time employment until age 70, and suffer reduced pensions if retirement takes place before 67 (Danish country statement, p.4). In the *United States*, the median age of faculty in 1969 was 41 years. By 1984 the median had increased to nearly 46 years (U.S. country statement, p.3).

Some problems of an age profile with more than 60 per cent of staff members now in the age group 35 to 60 were identified in a report from the Danish Council for Research Policy and Planning in 1979, which showed that during the period 1974-1977 mobility was restricted to about 3 per cent of tenured staff, almost all of it in the age group below 40. In August 1983 a working group on the mobility of scientists was established, with a view to making proposals that would increase mobility between the university sector, ministerial research institutions and R&D units in the private sector. Lack of "pension portability" between public and private service was seen as one aspect of the problem needing attention. Incompatibility of pension schemes between different sectors of employment is a factor discouraging mobility in a number of OECD countries.

Imbalances in the age structure of the academic profession have many consequences. If it is true that academic productivity in some subjects may be higher at earlier stages of the academic career, a larger number of older staff may possibly affect the overall productivity of universities and their research potential. The high demand for staff characteristic of expansionary periods means that some men and women not of the highest potential obtain (and remain in) academic posts. Bunching in the third career quartile creates promotion blockages and affects morale. Recruitment opportunities are depressed. Depending upon the demand for places generated by the overall population profile, a large number of academic staff reaching retirement age at about the same time may create staff shortages, especially in areas where there is competition from industry and the public service. For example, whereas the number of university teachers retiring in 1981 in *France* was only 181, it is forecast that this total will rise to 961 for each of the years 1996 to 2000. Opportunities for new knowledge to be reflected in the content of courses and the direction of further research effort can be diminished. Institutional vitality and flexibility can be inhibited by too large a proportion of older staff.

In France, as elsewhere, the academic profession is ageing. Full professors have an average age of 50, the youngest group being those in law (48) and the oldest in the humanities (54). A somewhat similar distribution applies to the *Maitres Assistants*, with an overall average of 43.5, whilst *Assistants* average 36. There are difficult promotion problems, only partially overcome by the transformation from time to time of *Assistant* posts into those of *Maitres Assistants* (in 1980, as many as 2 100 such posts were transformed in this way). With the slowing down of growth, more and more men and women are retained for longer periods at the *Assistant* level. In 1980, a third of all *Assistants* had occupied such positions for 11 years or more, some 39 per cent for 6-10 years and only 28 per cent for 5 years or less. The proportion of long-serving *Assistants* was highest in the sciences, with 45 per cent having occupied such posts for at least 11 years, and only 22 per cent for five years or less. Given that there were more than five times as many university teachers in France in the early 1980s compared with twenty years earlier, and four times as many researchers, it is unsurprising that the current lack of growth has given rise to promotion and opportunity blockages.

Mobility and "New Blood"

If a skewed age profile diminishes the vitality and flexibility of single institutions, it also reduces the mobility of staff between universities, and across whole sectors (university/non-

university, university/private sector). People stay put, because economic stagnation, especially when associated with demographic decline, provides few opportunities elsewhere. There is good reason to believe that a reasonable level of mobility to alter the mix of ideas, interests and specialisms within departments and other academic units, some stirring of the intellectual pot, is a necessary condition for high levels of academic productivity. Here again, there is a balance to be struck. During the years of expansion many staff moved on, often to more senior positions, after only a few years in a post, and before their contribution to the work of a particular academic unit had been realised.

Of even greater seriousness is lack of opportunity for able young men and women to secure academic positions of any kind. Universities in many OECD countries are facing the problem of a lost generation. Governments have been obliged to introduce special measures to combat this problem. In Sweden, for example, special grants are made to fund what are called "intermediate appointments". In Germany, too, there have been, since the introduction of the Heisenberg programme in 1977, special schemes to facilitate the recruitment of young scientists. Temporary post-doctoral fellowships are being established with the research councils to give new PhDs the opportunity of renewing research. In some countries post-graduate appointments are being made in subject areas where particular shortages exist with higher levels of remuneration than normal research training grants. Unless some action of this kind is taken, the academic profession risks becoming split in a way noted in the U.S. country statement:

> "Faculty members are divided now into two camps. Those older in years and tenured in their disciplines are members of one camp and those younger and not tenured are in the other. The young faculty face the prospect of moving from place to place, always scrambling for work, so-called gipsy scholars. The older faculty are conservative academically, defensive about tenure and insecure despite protection ..." (p.9).

An ageing academic profession has a greater impact on research than on teaching. A British report (ACARD/ABRC, 1983) stated that where no new members of staff had been recruited for some years "the effect on research is to reduce vitality and the influx of new ideas, but more than that a situation is developing where basic health of the disciplines is being threatened". It is for this reason that in those countries which have introduced "New Blood" schemes, the emphasis has been on science and technology rather than the social sciences and arts. The U.K. scheme, launched in December 1982, provided for six hundred researchers and lecturers in natural science and technology (200 per annum for three years) and 30 per year in the arts. The government also made available additional funds for making appointments in information technology, a field in which many OECD countries report actual or incipient shortages of adequately trained manpower.

Coping with new disciplines and research areas like information technology exemplifies the problem that faces universities at a time of contraction. New subjects do not constitute a problem in an expanding system; there is always headroom for starting new departments and appointing the necessary staff. Not so when numbers and resources are static or declining. New activities can only develop at the expense of the old. Starting up in one place means closing down in another; and it is in this connection that many of the current problems concerning the academic profession arise.

In October 1984 the French government announced budget proposals which would enable 800 new posts to be created in the university sector for "first cycle" professionally-oriented courses, mainly in engineering, the applied sciences, and computer science. Finance was also made available to enable universities to appoint appropriate numbers of technicians to support the work of the professors and associate professors appointed under these arrangements. Some of the necessary finance would be obtained by savings in administrative staff.

Lack of mobility and of job opportunities can have a serious effect on the academic and institutional competitiveness that has hitherto been an important ingredient in raising and maintaining the quality of instruction and research output. In systems where students are encouraged to study at their home university, where staff unionisation diminishes the number of promotion posts that can be offered to outsiders, and where, because of financial exigency or the application of national civil service pay scales, it is impracticable for institutions to offer higher salaries or differential conditions of service to attract high flyers from elsewhere, there is a risk that the quality of research and academic productivity will suffer. This is compounded if the distribution of resources is based upon considerations of institutional equity rather than of selectivity in relation to excellence. There are several OECD countries that face problems of this kind, and where in an effort to stimulate a flagging academic economy action is either being planned or undertaken to stimulate competitive bidding for resources and rewards. Democratised modes of university governance do not always facilitate appropriate responses to such measures, because interest is concentrated on the improvement of conditions of service and the maintenance of solidarity, rather than the development of individuality and selectivity associated with distinctiveness and excellence in research and scholarship.

Tenure and Conditions of Service

Mainstream, career appointments in universities have usually been for life. Once confirmed in post, following a period of induction and probation which can extend into an individual's early 30s, it has been expected that employment will continue until retirement. This aspect of academic employment is more important than whether staff are national or regional civil servants or hold their posts at the pleasure of a university's own governing body. The realities of tenure have transcended differences in the formal basis of employment. This has been true even in countries where the basis of contracts differs sharply between institutions. For example, in some British universities, legal opinions have upheld staff views that they cannot be dismissed save for narrowly-defined "good cause" which does not include financial exigency or redundancy, and that a university that dismissed staff for reasons other than good cause might find itself having to pay substantial damages to the individual concerned, but the issue has not been tested in the Courts. In other British universities contracts are drawn up in a way that would apparently permit the university to give three or six months' notice without any limitation as to "good cause". In practice, however, it would be impossible on the basis of their recent practice to distinguish universities in the one category from those in the other. Despite the loss of several thousand academic positions since 1981, no university in the United Kingdom has dismissed staff for reasons of financial exigency or redundancy. All the losses have taken place on the basis of voluntary severance, with more or less generous levels of personal compensation.

Tenure is defended primarily on grounds of academic freedom. The State has been willing for the most part to accept the claim that academic research and teaching can only flourish in conditions of freedom of speech and of thought, that if they are to fulfil their purposes, universities must to a greater or lesser extent be exempt from the requirements of close public accountability that are applied to other state-supported institutions, and that provided they act within the law, the fact that what professors say and do is embarrassing and incommoding for the State is no bar upon their receiving continued public support. In the words of the U.K. country statement "the ideal is of individual scholars in autonomous institutions being accountable to nothing except their own professional judgements" (p.44).

The issue of tenure is in many countries at the forefront of arguments about relations between universities and the State. Its advocates stress academic freedom. They argue that

life tenure is a powerful attraction to men and women who might otherwise seek greater pecuniary awards in industry or commerce. They insist that the functions of universities with respect to research and the advancement of knowledge cannot be properly discharged if, due to the insecurity and dependence of their staff, they are subject to influence by every passing whim of political fashion.

Opponents of tenure ask if the nature of the work undertaken by academics really justifies their being treated differently from other groups of publicly-funded employees; point to the bad effects on institutional flexibility and responsiveness of such a high proportion of staff having life-time posts; suggest that many staff at present in a post would not have been appointed in the more astringent employment climate of today, as compared with the years of easy-come and easy-go expansion; call for the creation of additional headroom and new opportunities for the lost generation of young graduates and post-doctoral candidates who today encounter great difficulty in obtaining positions, and cast doubt on the claim that tenure or its absence features in the decisions of able young men and women about taking up academic careers.

Whatever the *de jure* basis on which academics hold their positions, *de facto* tenure is a widespread privilege, and one which few governments and institutions have so far felt able to deny. Where staff reductions have had to take place, they have for the most part been on a voluntary basis. Retirement ages have been reduced, and staff compensated for leaving early. Most of the headroom for new appointments that has been secured has come from special government subventions, rather than from within existing resources. The level of substitutability within the academic profession is relatively low. To become an academic historian or mathematician requires early commitment, and the nature of most disciplines make it virtually impossible to change horses in mid-stream. To keep up with advances in knowledge and to retool for new tasks within specialities is difficult enough. Between them it is virtually impossible. Public service administrators may move reasonably happily from department to department. There is employment for specialists such as statisticians and medical doctors in many different public and private service contexts. Academics are not so fortunate. Not only is it virtually impossible to change a subject or specialism, it is very difficult to step off a university career ladder into public or private sector employment at a comparable level of seniority. All the more reason, then, in the eyes of those who defend tenure, that men and women who by committing themselves to the academic enterprise have ruled out so many other possibilities, should be protected in their existing posts.

Although the possibilities of transferring staff between disciplines are severely limited, several countries, e.g. the United Kingdom, Denmark, the Netherlands, have in recent years begun, albeit on a relatively small scale in most cases and on a voluntary basis, to transfer staff between universities, in order to fulfil policies of concentration, to secure adequate critical mass economies of scale and to establish centres of research excellence. This does not create any new positions, but it does reduce the number of staff who might otherwise have to be made redundant. Several countries are also encouraging joint appointments, whereby academics receive part of their salary from the university, and part from private or public enterprises to which they give a proportion of their time. In some OECD countries, however, where university staff have traditionally been part-time appointees, there is a trend in the opposite direction, in order to secure the continuity and commitment of staff to teaching and research programmes that may be threatened by a division of responsibilities and loyalties.

In those OECD countries where national and regional salary scales apply to academic employment, university averages tend to be higher and there are better promotion prospects than in the non-university sector of higher education. The academic career ladder usually has only a modest number of rungs, and where this is not the case, action is being taken to simplify the career structure. Promotion to the upper grades is on academic merit, in the

measurement of which research performance usually plays the largest part. Only a minority of staff can expect a full professorial appointment before the end of a career.

In the appointment and conditions of service of academic staff, as in some other areas of university life, sharp contrasts exist between formal bureaucratic requirements and everyday custom and practice. As we have seen, there are significant differences between universities in the United Kingdom on the basis of tenure. The practical implications of these differences have been minimal. In Italy, university professors are civil servants, subject to the full formalities of the bureaucratic apparatus. In practice, entry to and progress within the academic profession depends upon a strong element of patronage (Martinotti and Giasanti, 1977). In some countries, the final word in respect of appointments formally rests with the relevant Minister, but it would be highly unusual for the wishes of the university to be overridden.

Current Problems

The country statements suggest that several staffing problems will confront university systems in the coming years.

Age structures have been distorted by rapid growth in the 1960s and 1970s, with consequent effects upon appointment and promotion prospects.

There are now numbers of very competent young researchers and teachers unable to secure a foothold on the lower rungs of the academic career ladder. Although comparison is difficult, it is possible that in ability and potential they are superior to some of those who entered the academic profession in the years of growth. Schemes to facilitate the recruitment of younger staff are generally limited in scale and in scope, being focused particularly on certain priority subjects.

Although eligible candidates for many fields of academic work are numerous, there are specific areas in which competition from industry makes posts difficult to fill, with worrying consequences for the future supply of qualified manpower.

Low levels of substitutability, together with the tenured basis of many appointments, make for great difficulty in transferring resources from one area of academic work to another.

In some systems, too large a proportion of undergraduate teaching is being undertaken by temporary staff on short-term appointments and by part-timers. This is only partially compensated for by bringing on to campus larger numbers of adjunct and honorary professors and lecturers with professional and industrial experience.

The academic profession is becoming fragmented by the contrast between those with tenured full-time posts and those without, between those able because of their subject expertise to obtain lucrative consultancy work and those who cannot, and between those within and those outside the "sunrise" fields favoured by governments and funding bodies.

Although the proportion of women students has increased, this is not yet reflected in numbers of women academics. In some disciplines, the upper reaches of the academic profession are still very much a male preserve.

The dominance of research reputation as a criterion for appointment and promotion diminishes the individual academic's commitment to his or her own institution, and to the teaching and service activities that are organised on an institutional, as against a departmental basis.

There are few matters of greater importance to the future of the university than the quality, dedication, motivation and productivity of academic staff. Insofar as these are endangered by current trends, they deserve the closest attention and concern from the authorities of each system.

Chapter 9

GUARDIANS OF QUALITY

Sources of Concern

Recent years have seen a new interest on the part of governments, validating and accrediting bodies, employers and the public in the quality of both inputs to and outputs from courses and research programmes in higher education, not least in universities. In fact, "quality" has become one of the central organising concepts of debate and discussion about education in the 1980s. Such interest has several sources.

The first is the need for legitimacy of economic strategies designed to reduce the inflationary pressures which, perhaps more than the "oil shocks" of the 1970s, have been responsible for the serious recession that has afflicted many countries over the last ten years, have lent prominence to containment or reduction of public expenditure, including that on education. In legitimising the selectivity that accompanies funding reductions among sectors and within institutions, quality is a key consideration. Although less unambiguous than they are often made to seem, quality judgements are an important counterweight, by virtue of their apparent objectivity and universality, to single-interest group pressures and regional concerns.

The invocation of quality finds a sympathetic hearing among those, such as employers, who believe themselves to have suffered during the recession as a consequence of standards in schools, colleges and universities having fallen during the years of rapid expansion in the 1960s. The cry "more means worse", immortalised in the United Kingdom in relation to the expansionary proposals of the Robbins Report of 1964, has by no means been unique to that country. Student unrest; the elective programmes that characterised some new universities attempting to create a non-traditional academic culture; the ease with which aspiring academics obtained first appointments, and those with a minimum of experience secured promotion, all combined to cause disquiet among opinion-formers, administrators and policy-makers.

The international competitiveness of some countries suffered during the 1970s from adverse comparisons of quality in innovation, design, manufacture, and performance. The rise of the consumer movement focused on the importance of value for money, a cry taken up by governments in relation to expenditure on education. Funding bodies, keen that money for research and development be used to best effect, began the more selective direction of funds to those individuals, groups, departments and institutions from which useful results might most likely come. Staff were reminded from within and without their own ranks that one of the imperatives of academic life is the establishment and maintenance of standards of quality able to withstand sustained critical scrutiny. With rapid growth and expansion for the most part behind them, and with greater competition for initial appointment and subsequent

promotion, there was greater emphasis on performance criteria against which claims for support could be judged. Such pressures were reinforced by the effects of legislation on employment and race and sex equality, which required institutions to demonstrate that appropriate criteria had been used in the appointment and promotion of staff. Another reason why quality came to be stressed in the educational discourse of the early 80s was the difficulty of evaluating research potential and performance in the many new and interdisciplinary fields of study and investigation that had developed in universities during the preceding decade. In particular, governments and other funding bodies had a need for objective advice on what lines of research and development scarce resources should be expended.

Quality Control

All this has combined to make the term "quality" as ubiquitous in the education discourse of the 1980s as was "accountability" in the late 1970s and "participation" in the first half of that decade. In the words of a 1982 leading article in the *Times Higher Education Supplement*, "It may be that in the 1980s quality – whether the preservation of traditional academic excellence, the fostering of vocational relevance, or the better satisfaction of student customer demand, will become as much an organising principle for higher education as access, the extension of opportunity, was in the 1960s".

In *France* we have seen the creation of a new committee, chaired by an eminent mathematician, concerned with the evaluation of quality in universities, consistent with what has been described by the Minister of Education as "republican elitism". The committee is charged to submit an annual report to the President of the Republic and is likely to commission special studies of particular aspects of university operation. In *Sweden* the National Board for Universities and Colleges has recently reviewed the means employed for making judgements about research quality and output, drawing extensively on the procedures of research agencies within and beyond higher education. In *Australia*, the government decided in 1980 to establish ten special research centres in universities and, more recently, Key Centres of Teaching and Research in some colleges of advanced education. In *Canada*, there has been some movement away from "... the earlier rigidities of an enrolment-driven grants system" (Canadian country statement, p.37) towards a more flexible basis of funding in which quality considerations play a part. The *German* country statement reports that "... increasing importance has been given during the past few years to the principle of differentiation or diversification". Evaluation of performance concentrates on the different forms of R&D funding. Formalised evaluation procedures have seldom been applied. Recently, however, the Science Council has been considering ranking procedures. In *the Netherlands* spending economies made since 1981 have been on the basis of encouraging subject specialisation between universities, including the transfer of staff and departments based on such considerations as "... occurrence of small units; poor teaching and research quality; space and facilities; expensive equipment; society's need for graduates in particular disciplines; discrepancies between available capacity and student interest; scarcity of talent; variation in student numbers wishing to take courses within particular subject areas" (Netherlands country statement). Efforts have also been made to protect high-quality research from the consequences of funding reductions, although " ... little progress has been made with the plans to show how research funds are spent and what results have been produced, and there is virtually no sign of measures to make research more socially relevant". Overall, "a start has been made in various ways on the evaluation and external assessment of teaching and research". The *Spanish* authorities identify one of the most important problems faced by their universities as the effect on the quantity and quality of teaching staff of the

"multiplication of the university population over a few years". In its 1985 Report to Parliament, the *New Zealand* University Grants Committee refers to the way in which earlier cuts in funding and the underfunding of increases in numbers "have impaired the ability of the universities to provide the level and quality of teaching and research which would maintain the proud tradition of New Zealand university education" (Wright, 1985).

In the *United States*, with its very large number of higher education institutions and free market orientations, the concept of a hierarchy of higher education institutions is commonplace. In addition to the Carnegie classification, to which reference has already been made, there are regular national polls which establish the views of academics in different disciplines about the relative standing of departments in their own fields. There is little hesitation about references to the "top ten", identified by Orr (1984), as including Harvard, Berkeley, MIT, Chicago, Stanford, Yale, Princeton, Columbia, UCLA and Wisconsin – a list produced by combining individual subject rankings. Statisticians at the University of Compiègne ranked sixty-three French universities on their research activities, dropout rates and academic "dynamism"; the "top ten" overall were Grenoble I, Toulouse III, Paris I, Aix-Marseille I, Brest, Paris IX, Paris XI, Mulhouse, Lyons II and Avignon (Charnay, 1984).

Some years ago, Kerr (1971) identified eight tests that were "generally useful" in evaluating the overall quality of different systems of higher education. These were:

1. "The quality of scholarship in international competition ... judged by the value placed on the published research of a nation's faculties in worldwide intellectual circles and the general acceptance of the advanced degrees from the country's leading institutions;
2. The ability to secure talent from the total population without regard to class or racial characteristics ...;
3. The provision of technically trained persons to fill the needs of industry, agriculture, government and welfare services ...;
4. The provision of an opportunity for a liberal education, appropriate to the times, to undergraduate students;
5. The quality and balance of service (consultation, policy, proposals and so forth) to the several segments of society ...;
6. The quality and balance of constructive criticism of society;
7. The effectiveness of the governance of higher education ...;
8. The degree of popular support for higher education generally and from its alumni in particular ..."

The factors associated with departmental and institutional prestige have been the subject of much discussion in the United States (Beyer and Stevens, 1977). There have been efforts to disaggregate, and challenges to, some taken-for-granted performance indicators such as, for example, the number of articles published in refereed journals (Miller and Serzan, 1984). A rash of articles and books concerned with the evaluation of institutional quality and achievement have appeared, many directing particular attention to the shortcomings of institutional management. Academics have felt the need to answer populist criticisms, of which the following is not untypical:

> "Education is the biggest domestic industry in the American economy. At $150 billion a year, it is twice the size of the automobile or steel industries. The education establishment does not want to hear about the achievement decline. They have a big industry to protect – and expand. We must learn to analyse the public pronouncements and written documentation of this industry with as jaundiced and careful a scrutiny as we apply to the self-serving statements of any other entrenched 'bureaucracy'" (Copperman, 1979).

Faced with necessity to legitimate the selective distribution of diminished resources within their own institutions, and to present an appropriate image to funding authorities and governments, universities have initiated large numbers of departmental and faculty reviews – a process now so ubiquitous as to have generated its own literature of good practice and techniques. In the United States, some legislatures and governing boards are requiring universities to develop "value-added" testing as a condition for continued state support (Boyer, 1985*b*).

In discussions of how to cope with such problems, business metaphors are much in evidence. And although, as in the case of the enquiry into aspects of university management sponsored by the United Kingdom Committee of Vice-Chancellors and Principals (the "Jarratt Report") (1985) such efficiency studies are often limited by their terms of reference to the organisational and financial aspects of university operation, it is difficult to avoid spilling over into academic terrain. If the university is a business, then its products are students, degrees and research findings. All three, it is argued, are, if we possess the will to do so, capable of being evaluated department by department, institution by institution. Boyer (1984) quotes the Chancellor of an American state university:

> "To know as much about our students on exit as we know about them on entry hardly seems an extraordinary expectation ... how can we possibly give any meaningful leadership to programme and service improvement without data on what our graduates know and think?"

Indicators of University Performance

Hitherto, academic output and productivity have been monitored and controlled by a complex array of formal and informal processes. These include the critical review of what academics write about their work, both prior to publication through referee systems, and afterwards; the evaluation by funding agencies of applications for research grants and contracts; the formal recognition of courses by national, regional and professional accrediting agencies; the employment in some systems of external examiners and assessors at undergraduate and (almost universally) at post-graduate levels; and the visiting of and reporting upon departments and whole institutions by representatives of funding bodies or the national inspectorate.

Anxieties about the effects on quality of more open access, emphasis on equality of opportunity, a search for "fairness", a stress on social justice, the weakening of what B. Clark (1983, p.256) has called the "bottom up search for competence" and the need that has already been noted for governments and institutions to justify treating activities unequally, have all generated a new concern about measuring the quality and performance of universities. An OECD-CERI study of the Development and Use of Performance Indicators in Higher Education, undertaken as part of the programme on Institutional Management in Higher Education (IMHE), identifies several groups of such indicators – student success and graduation rates, the market share of applications that institutions receive, the number of completed and successful dissertations and theses as a proportion of the total number of doctoral candidates, the average length of study for a given diploma or degree, and student evaluations of teaching. Among what the IMHE study calls "operating indicators" are student workload, student/staff ratios, unit costs by programme, class sizes, the range of available options and staff workloads. "External performance indicators" include the acceptability of graduates in employment, the destinations to which graduates go and their reputation as judged by external observers. Finally, indicators related to research include numbers of

publications, the analysis of citation indices, the share that a department or institution has of the total research budget in its subject, the number of applications received for graduate study, the volume of activity of staff in undertaking consultancies and in producing inventions and/or patents, the frequency with which faculty are invited to participate in high-level scientific conferences, the numbers of them who are elected to membership of learned academies, and the award to staff of major prizes and distinctions. Not all such indicators are as straightforward as they seem. The authors of a recent study on what constitutes a refereed journal state that their research has shown that well-defined consensually-agreed standards do not at present exist for refereeing in academic and professional journals, and that the

> " ... lack of accepted, standardised reviewing procedures ... has serious implications for promotion and tenure decisions ... The present system of using publication in refereed journals as an indicator of the quality of scholarly contributions appears to be one of the 'floating standards' of the entire evaluation and reward system in academia which ... make the tenure process so inequitable, and at times irrational" (Miller and Serzan, 1984).

In referring to the use of such performance measures, the U.K. government (DES, 1985, p.49) has stated:

> "The essential purposes of performance measurement in education are to introduce into considerations of policy and the management of the education system at national and institutional level some concrete information on the extent to which the benefits expected from education expenditure are actually secured, and to facilitate comparisons in terms of effectiveness and efficiency as between various parts of the system, and as between different points in time".

As pressures for greater accountability grow, voices from within the academy are being heard in defence of qualitative outcomes that seldom feature in the fashionable inventories and evaluations.

> "How effectively can we measure ... the ability to think critically, self-esteem, independence, self-reliance, enhanced awareness, increased tolerance, empathy, intensified sensitivity, more sophisticated tastes, the rejection of stereotypes or the capacity to grow in each of these qualities?" (Ashworth, 1985).

After reviewing some of the performance indicators currently being studied within the Department of Education and Science, such as entry standards, completion rates, unit costs per graduate, labour market destinations, and social rates of return, the U.K. government refers to the "other social benefits" derived from higher education that are not associated directly with highly-qualified manpower or research, including the preservation of the stock of knowledge and various cultural benefits. However, even the statement in the very last paragraph of the government's Green Paper that such items are "not amenable to measurement with any pretention to objectivity but it is important that their existence should always be kept in mind", would presumably not satisfy academics who reject the relevance of such indicators to the assessment of academic performance. In Kogan's words (1986):

> "Evaluation which pays no proper heed to the nature of higher education's tasks, individualistic and dependent upon creativity as they are, but instead looks for outcomes which can be easily quantified, will be doing violence to the activities being evaluated".

Eligibility and Access

The task of maintaining quality along dimensions such as those identified in previous sections has until recently been that of academics themselves. As we have seen, however,

governments and funding bodies are now intervening more directly. At the same time, they are still committed to public policy imperatives that seek to widen access, to minimise the effect of classifications such as "woman" or "working class", to break down boundaries that at one time made it impossible for men and women educated other than in traditional secondary schools to enter university and confined certain institutions of higher education to sub-degree qualifications. A progressive weakening has taken place in the sharpness of the criteria by which the eligibility of an individual or an institution for a particular kind of accreditation is established.

In respect to admissions into universities there are significant policy variations among Member countries. In the United Kingdom and in the non-European countries – except for the public universities in Japan – the right of an institution to apply its own criteria is jealously guarded. In principle each university has the right to determine its own criteria of eligibility, to pick and choose amongst those who request access, to deny or to reject without giving detailed reasons. By contrast, in the continental European countries, admission policies and procedures are established by national authorities leaving little autonomy to the universities on decisions in this area. In reality, practices are often less contrasting than the formal rules appear to imply. Increasingly, autonomous institutions have had to comply with federal or state regulations guiding the entry and selection of candidates; on the other hand, growing numbers of departments and faculties in European universities have introduced in more or less official ways their own entry and selection methods and criteria.

Faced with demographic downturn, diminished resources, competition from other providers and from claimants for teaching and research funds, universities have had to involve themselves in marketing and public relations to an extent that would have been unthinkable even a decade ago. Many universities have their own public relations and marketing staff. National organisations, such as the United Kingdom Committee of Vice Chancellors and Principals and the American Association of Universities employ professionals to help them make the universities' case to government and to industry. Commercial publishers have found a profitable line in consumer guides to university courses. All this has generated anxieties that, in Boyer's (1984) words:

> "...colleges and universities may get so enamoured with marketing that they lose sight of their essential goals. They win the battle, perhaps, of obtaining more students, but lose the 'victory' of educating them well – be they traditional students or by-passed populations of minority learners and adults".

If the imperative of general access of qualified persons to higher education is maintained alongside the right or ability of an institution to impose criteria of eligibility in order to control admissions, a hierarchy of departments and/or institutions will develop. Clark (1983, p.255) has argued that such vertical status differentiation is the most practical way of protecting and ensuring quality since it is "virtually impossible, even self-defeating, to attempt to ensure competent effort in most of the system by top-down oversight, planning and administration". The *shape* of the status hierarchy affects the motivations and behaviour of those who work within institutions. Again, in Clark's terms "there must be something to be won by all those who man the understructure, working harder to be better. That something is higher status and its associated rewards".

Where the position of an institution in a status hierarchy is determined by law or regulation, some of this incentive is removed. In the United States, a regular movement of institutions between the unofficial categories of the Carnegie classification is recorded. An inspired President, good fortune in regard to location, sound judgement in choice of academic priorities, an able and enthusiastic young faculty, sustained support from the regional community and from industry, can all play their part in enabling an institution to move into a new category or to raise its rank in specific subjects.

The Functions of Assessment

Overall, the whole issue of assessment is now a much more prominent aspect of discourse about higher education than was the case even five years ago. It may be useful at this point to categorise the purposes for which assessment is employed.

First, it is undertaken to rank and certify individual performance. Within this category come internal and external examinations, such as those conducted by lecturers themselves, state or nationwide external examinations such as the General Certificate of Education, the *Baccalauréat*, or at the other end of the academic spectrum, the *Doctorat d'Etat*. In the process of ranking individuals for the purpose of assigning relative achievement within a peer group, or certifying the possession of certain knowledge, skills or understanding as prerequisites for further stages of education or employment, many different techniques can be and are employed. They include the familiar three-hour "unseen" paper with its requirements for essay-type answers; tests of achievement standardised on smaller or larger populations, and course work and projects. Recent years have also seen a growth in what is known as "competence testing" or "capability" especially in the United States.

A second sub-category of assessment comprises that undertaken for purposes of educational diagnosis and curriculum evaluation. Here again, there are several levels. Conscientious staff have long undertaken their regular testing of student progress, sometimes using instruments specially designed for diagnostic purposes. They have sought to identify those kinds of knowledge, skill and understanding in which their classes are proficient and deficient, to identify the strengths and weaknesses of particular students within these knowledge and skill domains, and to evaluate the extent to which the objectives of particular courses or programmes of study are being achieved. There are many methods of assessment which can be used in the diagnostic and evaluative mode. The information we get from answers to a particular examination, especially if candidates can be classified by region, socio-economic background, size of instructional group, type of teaching employed and other situational and instructional variables, can tell us much about students, teachers and institutions. It can also be informative about the kinds of knowledge and skill that the questions attempt to sample and the relationship of these to the overall course objectives.

A third mode is the monitoring of institutional and system performance. It is this category of assessment activity that is currently prominent. Here the unit of comparison is not the individual student, but a department, unit, faculty, college, polytechnic, university or even the whole higher education system. The tests employed can be among those used in the ranking/certifying mode and those of the diagnostic/evaluative mode. There is a long history at school level of using examination results to make judgements about the relative success of different institutions, or to establish whether standards of attainment have risen or fallen over time. In those systems where diploma and degree examinations are specific to individual universities there is greater difficulty in evaluating institutional standards. In the United Kingdom, where employers sometimes hire university students before degree results are known, "A" level (18-plus secondary school examination) results play a part both in determining the institutions from which enterprises will seek to recruit, and in helping to decide which individuals might be taken on. Also from the United Kingdom, there is some evidence that universities award a smaller proportion of first and upper second-class honours degrees to student groups with lower "A" level scores, although the relationship between the two sets of measures is a matter of some controversy.

Where demographic decline and public expenditure restraints begin to be felt more sharply in the late 1980s and early 1990s, increased interest in all these modes of evaluation is likely, not least, on the part of those bodies which have difficult decisions to make about priorities and the distribution of resources.

Evaluating Management and Leadership

The application of management concepts to quality control in higher education has not gone uncontested. Arguments such as those of Deming (quoted Keller, 1983) that "quality is the key to higher productivity because approximately 20 per cent of the cost of things, from automobiles to college educations, is a charge for waste" are regarded by some as much over-simplified. In any case, given the intrinsic unpredictabilities that surround the research and teaching enterprise, the price of eliminating waste from universities might be much higher than in some other areas of activity. Baldridge *et al.* (1978, p.25) are among those who argue for the uniqueness of universities as organisations :

> " ... academic organisations have several unique organisational characteristics. They have unclear and contested *goal* structures; almost anything can be justified, but almost anything can be attacked as illegitimate. They serve *clients* who demand input into the decision-making process. They have a problematic *technology*, for in order to serve clients the technology must be wholistic and non-routine. As a result, academic organisations are important instances of professionalised *organisations* where professionals serving the clients demand a large measure of control over the institution's decision processes ..."

The metaphor of the university as a professionalised organisation has somewhat different consequences from conceiving of it as a business. As Baldridge emphasizes (p.28) "our metaphors and images are not innocent, for the way we view the world and summarise it with models helps determine the way we act".

Such metaphors are also relevant to the way in which leadership is exercised within a university. Baldridge and his associates argue that the President or Vice-Chancellor or Rector is a facilitator more than a leader. Twenty-five years ago, when universities were rapidly expanding, Reisman (1962) argued that there was no room any more for "the Great Man" university president, except in institutions that were "backward". He thought that the President of a modern diversified university could exercise "only the most modest and incremental influence". With the growth of big science, Deans and heads of departments were becoming too powerful to be subordinate to presidential wishes – "the average Princeton Professor of Engineering and Science today controls an annual budget of $120 000, and such a man is not going to be subordinate to a President". In at least two countries, there is evidence that a higher proportion of university heads now have a background in science than in the past. Sloper (1985) has shown that whilst in 1963 only 20 per cent of Australian Vice Chancellors had science as their major academic field, by 1983 the proportion was 58 per cent, whilst the equivalent figures for arts were 20 and 11 per cent. In the United Kingdom, some 70 per cent of Vice Chancellors now have a background in science and technology. There were also those who saw dangers in administration becoming "the fount of authority from which faculty, students and alumni draw their respective roles, and under whose direction and control all activity is performed" (Millet, 1982):

> "Such a concept of authority ... is alien to the great social purposes of higher education and does not conform with the facts of academic life. On the other hand, when the power of administration is conceived as a constituent element of a community of power, then the functions of that power are more definitely prescribed and the limitations of that power are more clearly understood" (p.181).

In the 1963 first edition of *The Uses of the University*, Clark Kerr (1982) wrote of the President as a "mediator", a usage that by 1972 he had come to regret:

> "I wish I had used a different word with different public connotations – political leader, or community leader, or campus statesman, or unifier or peacekeeper, or chief per-

suader, or crisis manager or agent of integration – anything but mediator. The tone should have been conveyed of active leadership" (p.143).

Trow (1985) suggests that there are four dimensions along which leadership in higher education is exercised – symbolic, political, managerial and academic – and that whatever the balance of priorities among these in the performance of a particular presidential role, "effective action in all areas requires that the president have the legal authority and resources to act, to choose among alternatives, even to create alternatives, in short, to exercise discretion. Without that discretion and the authority and resources behind it, a president or chancellor cannot exercise leadership, whatever his personal qualities".

Broadly speaking, we can identify three levels at which administrative leadership is exercised within universities.

First, by the men and women who are heads of universities, polytechnics and colleges, the Presidents, Vice-Chancellors and Rectors, many of them appointed for life and devoting themselves full-time to the interests of their institutions.

Second, by the Pro-Vice-Chancellors, Deans, Pro-Rectors, Vice-Presidents, Departmental Chairpersons, Unit Heads, Course Leaders and Co-ordinators who devote a proportion of their time to administration, but who retain teaching and research responsibilities and are usually elected or appointed for a fixed term of years, sometimes on the basis of seniority in post.

Third, by the Registrars, Bursars, Finance officers and other career administrators who work closely with institutional heads and are responsible in large part for operationalising academic policy and ensuring each level of activity is adequately serviced.

Whilst the culture of the full-time administrative class in universities is more likely than that of other groups in academia to display the classical features of bureaucracy, this tendency is limited by some significant characteristics of the academic enterprise. Baldridge *et al.* (1978) and others have drawn attention to the political features of university life, and whilst in a general sense this term holds, the political environment of a university administration is significantly different from, for example, a central or local government agency. Most full-time university administrators are open to approaches from any member of the academic staff, from the most recently joined to the most senior and experienced. Secretaries, registrars, finance officers, building superintendents, statisticians, all interact regularly with lecturers, professors and research staff, dealing with queries, offering advice, citing and interpreting regulations, assessing the possibilities of carrying a proposal through committee, helping to gauge the mood and response of a departmental chairman or Dean or Vice-Chancellor – initiating and responding not merely up and down the line as in a formally constituted bureaucracy, but with *all* the individuals and groups that constitute the academic body.

Given the looseness of the couplings characteristic of such a culture, there is not much fondness in many universities for the arrangements favoured by Mayhew (1979) who argues for "the establishment of an administrative structure that preserves for central administration the needed prerogatives of implementing effective policies and assuring the subordinate units of the institution behave in fiscally responsible ways, while at the same time allowing for orderly consultation with all members of the academic community". The last sentence in this statement would not be enough to allay the anxieties which its first part would arouse.

Yet, despite the distaste that exists in many academic circles for any explicit stress on the power of administrative centres, there seems little doubt that there *has* over recent years been a trend for power and influence to move towards central administration. Wider application of central data-processing systems; the enactment of legislation and approval of regulations on such matters as equal opportunity, race relations and conditions of employment; the external press for accountability, are all part of it. But perhaps the single largest factor has

been the loss of financial certainty, the abolition in some countries of the forward funding which guaranteed income for a period of several years, and the introduction of "cash limits". When career opportunities are at a premium, it is unwise for a productive scholar to spend time on such matters, administration among them, that add little to his value in the academic marketplace. With research funds harder to come by, more time and effort has to be expended in preparing tenders and engaging in negotiations with potential sponsors. When clashes arise between the apparent interests of a group within the university and those of the institution as a whole, it is difficult for even senior academic staff to maintain a disinterested position. Where the central administration is not trusted, serious internecine strife can result. Where it is, administrative staff are increasingly called upon to exercise judgement, to arbitrate even-handedly between interested parties, and even to accept responsibility for decisions that may not constitutionally be theirs to make, in order that other individuals and groups can avoid having to bear the consequence of their action. Where emergencies arise and call for rapid responses, it is often only the head of the institution together with a small number of senior administrative and academic colleagues who are in a position to decide what strategy should be adopted. It has been argued that one of the important skills of the head of an institution is knowing how and when to "declare crisis". The institutional head who does so too soon may be accused of trying to arrogate power to his own position, and suffer accordingly. He or she who does so too late may be attacked for lack of foresight and planning. For the person who chooses the right moment, the recognition by colleagues that a state of crisis does indeed exist and requires radical action can shift power decisively, and sometimes permanently, towards the centre and the person of the President, the Vice-Chancellor or the Rector.

The status of university administration in different systems tends to reflect the culture of the wider society. Administration is a facilitating activity. In high-status universities, the academic reputation and income- and recruitment-generating capacities of professors create relations of dependency that limit the acquisition of power by administrators. At the other end of the academic pecking order, however, as accommodation and furnishings sometimes testify, there are fewer brakes on opportunities for administrative self-aggrandisement. At the highest levels of academic status and reputation, administration has traditionally been functionally interrelated with the goals of the university. Just as Archbishops, Bishops and Deans are first and foremost priests and scholars, so university Vice-Chancellors, Presidents and Rectors have for the most part been expected to have formidable academic credentials, although recently there has been a move in the United States to hire institutional heads from the world of industry and finance. In contrast, the head of government departments and of many industrial enterprises are professional administrators and managers, rather than specialists in the particular activity to which the organistion they serve is dedicated.

The ideology of administration in sacred institutions stresses the intrinsic character of the values to which they are dedicated, and tends to play down narrow administrative considerations. Professionals and administrators alike recognise the possibility of conflict. If it occurs, accountability and even efficiency are meant to give precedence to the imperatives of religious truth or scholarly creativity, to the values of academic freedom, participative governance, student welfare and collegiality. They do not, of course, always do so. But until recently, the ideological commitment has been firm.

One of the key functions – perhaps *the* key function – of academic and administrative leadership in the university is to foster and protect such core values. To the extent to which such values generate feelings, commitments and beliefs that go beyond the merely utilitarian, academic and administrative leaders must demonstrate exemplary performance. The diversification of higher education consequent upon growth has made this task very difficult. Greater specialisation at the level of discipline, role and sector has affected the status of

academic institutions. The sheer diversity and plurality of roles and functions performed by the modern university makes for difficulty in operationalising core values at levels that go beyond formally approved and officially generated statements and rhetorical assertions.

While it is still possible to operationalise these values in disciplinary fields or professional specialisms, it is more and more difficult to do so within the organisational framework of the university itself. Particularly so, when these values appear to be in conflict with those of the wider society. For a Vice-Chancellor, Rector or President to identify him- or herself with a controversial political or educational standpoint, may threaten to sharpen and make more visible disagreements with governments and funding agencies which in the longer-term interests of the institution it may be felt are best played down, but on which staff and faculty will nonetheless expect a stand to be made.

Characterised at they are by a modest level of functional interdependence among their operating parts, most universities have neither acquired nor welcomed the kind of "strong leadership" that may have been crucial to military, industrial or commercial success. The latter more often than not has put a premium on personality, visibility, charisma – even, within limits, eccentricity. Focusing as it does on discipline and specialism, on universal rather than parochial concerns, on the instrumental, facilitating rather than goal-setting functions of administration, the organisational culture of the university provides poor soil for the growth of leadership styles that focus on institution rather than process.

The recognition that interest groups must each be allowed their own rhetoric, which is not meant to be taken "seriously" in the sense of being subjected to critical analysis, has resulted in the heavy discounting of public pronouncements. Every university expects its academic and administrative leaders to be able, when necessary, to assert and restate such core values as academic freedom, collegial governance, the right to grade and accredit students according to internally determined disciplinary and professional criteria. Yet there is in many places today a worrying scepticism and knowingness about the "real" significance of such rhetoric.

University organisations display low levels both of individual substitutability and of functional interdependence. There are other nuclear physicists, but none so eminent as Professor X. Old Testament scholars abound, but no one has so assiduously cultivated the particular corner that Doctor Y has made his own. At the same time, the departure of Professor X and Doctor Y does not threaten the viability of the university as a whole. The closure of whole units is possible without the university losing its identity. In conditions of external tension and internal change, diversity of mission and a lack of clarity in goal definition and production function may be assets as much as liabilities. Individual and group-specific forms of intellectual production, associated with discipline-based rather than institution-based forms of consciousness, limit the possibility and impact of administrative centralism and of the visible leadership with which it is sometimes identified and confused.

Thus, in the context of university life, the very concept of administrative leadership is likely to be viewed with suspicion, not only by academics but by senior administrators themselves (Shattock, 1979). The concept embodies assumptions about the distribution of authority and power to initiate action that do not sit easily with the ideologies of academe. It fuels anxieties that get in the way of the proper exercise of administrative influence. It reinforces the feelings of many academics that resource constraints and contraction are diminishing their power to influence events, and putting excessive emphasis on mechanisms of administrative and financial control. Those who perform the most important administrative roles need adequate academic credentials to ensure a continuing commitment to core values. Despite all the changes in recent years, it is still assumed that policy initiatives should emerge from departments and departmental groupings, not from central administration. Skilful administrative leadership may facilitate and co-ordinate such initiatives, but should never lay claim to their ownership.

Yet, in many countries, the expectations of leadership and management in universities are now very different to what they were at the beginning of the 1960s. The report of the Steering Committee for Efficiency Studies in Universities in the United Kingdom (the Jarratt Report) (Committee of Vice Chancellors and Principals, 1985) found a wide range of modes of operating and management styles in the sample of six universities studied in detail. They perceived a shift in the tradition whereby Vice-Chancellors saw themselves primarily as scholars and as carrying out the will of the Senate, towards the style of Chief Executive, providing strong leadership within the institution. The Committee recommended that university councils should formally strengthen the executive role of Vice-Chancellors, who should be given the authority to carry through the responsibilities of such a role. Vice-Chancellors, along with those senior staff to whom many of their tasks would necessarily be delegated and from whom the next generation of university leaders would be chosen, needed opportunities to improve their managerial skills by appropriate training and, through periods of secondment and staff exchange, to gain some experience outside the university system. The Committee did not go as far, however, as to advocate the formal evaluation of the performance of university heads, such as now exists in some parts of the United States, a process defined by Fisher and Guehl (1984):

> "By formal evaluation, we mean the systematic, structured process of measuring a President's success using the solicited responses of persons affected by the leadership of the President. Such an assessment is usually conducted by a President's Board of Trustees, often with an outside consultant" (p.5).

The new importance being attached to the leadership provided by university heads is not only managerial in origin. Kerr (1984) has argued that to rescue general education from oblivion requires *educational* leadership from the President. Only by presidential action can the university answer criticisms such as those voiced in a Report on the Humanities in Higher Education produced at the end of 1984 by the National Endowment for the Humanities:

> "Although more than 50 per cent of America's high school graduates continued their education at American colleges and universities, few of them can be said to receive there an adequate education in the culture and civilisation of which they are members ..." (Bennett, 1984).

In their study of the presidency, Kerr and his associates found that only 2 per cent were active in their institutions' academic affairs. They argue that it is the President and *only* the President, with the help of his academic officers, who can provide voice and influence for the cause of liberal learning and general education:

> "Faculties, through their departments and schools, are the natural champions of the majors; students naturally champion electives. If general education and liberal learning are to have champions, they must be found among the academic administrators ..." (Kerr, 1984, p.35).

Particularly in the United States, there is renewed thrust towards emphasizing the *educational* responsibilities of university heads, not merely those which relate to management and finance. Whetton (1984) quotes an interview with the President of a major university:

> "I can see now that when I go home and look at the evening (TV) news and see myself in action, or read quotations from my speeches in the newspapers, that I might as well be President of General Motors or Proctor and Gamble. I'm projecting an image of an efficient administrator who is only incidentally interested in crucial educational concerns. I can see that the pressures of my day to day administrative activities have so dominated my attention that they have driven out any visible emphasis on educational values and priorities." (p.42).

Thus assessment, in one form or another, today permeates the university in a way that was not the case when the award of a degree or a diploma turned almost entirely on performance in a final examination, when competition for academic positions, for tenure and for promotion was less sharp, and when the assessment of performance in managerial and leadership roles was almost wholly informal. From first-year student to President, Vice-Chancellor or Rector, assessment in one form or another is an increasingly familiar feature of academic life. *Sed quis custodiet ipsos* is an issue of increasing relevance to the relations of university, state and society.

Chapter 10

THE TASK FOR THE FUTURE

Crisis and Criticisms

The university has in its essential forms demonstrated great capacity for survival. Clark Kerr (1982, p.152) suggests there remain today in recognisable form only about 85 of the institutions established in the western world before 1520. These include "the Catholic Church, the Parliaments of the Isle of Man, of Iceland and of Great Britain, several Swiss Cantons – and seventy universities".

Yet the post-1945 literature of the university is redolent with a sense of crisis. Post-war expansion led commentators to write of a crisis of values. The literature of student unrest at the end of the 1960s was similarly concerned with values and also spoke of a crisis of governance. As increasing priority came to be given in the 1970s to science and technology, and larger numbers of students opted for vocational subjects, a crisis was declared in the humanities. Much contemporary discussion is of how economic recession and demographic downturn have generated a crisis in funding.

The impact of the word "crisis" is now somewhat blunted by overuse. The fact remains that many universities in OECD countries are today troubled institutions. Not all universities, and not in all countries; but enough to cause serious concern to academics on several fronts. These include the continued ability of societies to fund universities to fulfil a full range of teaching, research and service functions, and the balance that should exist between them, particularly the extent to which utilitarian conceptions of university missions will damage the humanities and social sciences, and in so doing undermine the vitally important critical role of the university; the place that the university will have in the future knowledge society; pressures upon universities to adapt their work to what are seen beyond the campus (and sometimes even upon it) as pressing short-term social and economic needs; capacity for maintaining academic standards appropriate to university-level study in all the institutions that now bear that title; the possibilities of conflict between academic and scholarly imperatives and those of business and commerce as closer links with industrial research interests and resources of funding become increasingly significant to institutional viability, and the very future existence of some foundations in the context of demographic decline.

Whilst in most OECD countries universities retain a large measure of freedom from direct governmental intervention, their autonomy has been under pressure from demands for greater social and economic relevance, for evidence of effective use of scarce public resources, and for a clearer commitment to industrial success and professional competence. The proportion of resources over which academic governing bodies have complete discretion has tended to decline, even when total resources have increased. There is more earmarking, more targeting, more accountability. Thus existing legislation and statutes governing relations between State and university do not always adequately describe current patterns of operation.

In some OECD countries the altered situation has been recognised by major legislative changes, in some cases complicated by regional considerations. In Spain, for example, a law to remove the universities from the control of the Ministry of Education and to give greater decision-making powers to the autonomous regions ran into strong opposition and had to be redrafted several times (Evans, 1985*b*). In June 1986 the French government announced its intention of permitting universities to introduce their own degrees, which would be submitted to the Ministry of Education for validation, thus giving senior university staff greater control over the affairs of their institutions. There has been no lack of those willing to remind the State of its responsibilities towards the universities. A 1985 statement by the Carnegie Foundation for the Advancement of Teaching put the matter thus:

> "Today the vital federal connection to our colleges and universities is being challenged. After decades of strong bipartisan support, the current debate about budget priorities has been focused almost exclusively on numbers and on the negative aspect of higher education. The larger perspective has been lost. We hear how much education costs, not how much it is worth. We are told that students are exploiters, rather than tomorrow's leaders. And we are reminded of the abuses, not the benefits of higher education... We believe that the moment has come for the historic partnership between the federal government and the nation's colleges to be reaffirmed." (Boyer, 1985*a*)

Taken together, these and related problems add up to something even more worrying in policy terms than some of the alleged crises of the recent past. Earlier events were often of a kind that in the last analysis could be dealt with by academics and institutional authorities themselves. Today's difficulties implicate governments, local authorities, industry and other social organisations much more directly, and raise important questions about university autonomy. Uncertainties of mission and purpose are more easily dealt with in conditions of growth than in those of steady state or actual decline. New structures can be created to fulfil needs or to respond to new pressures, without the necessity of reforming or changing those that already exist. Today, this "add-on" option is no longer available. Many of the changes required by the crises of the past, however painful and difficult, drew upon ideas and aspirations that sustained the motivation and morale of at least a substantial proportion of academics, and at the same time offered improved career prospects and new sources of job satisfaction. Large notions such as the multiversity and the comprehensive university, the provision of mass higher education, and the democratisation of university governance offered excitement, a sense of being engaged at the frontiers of progress. Steps being taken in many countries to deal with the current difficulties that face the university have no such appeal. External stress upon accountability, relevance, clearer priorities, selectivity and performance can create an atmosphere of anxiety and defensiveness within academe inimical to the ordered pursuit of teaching and research.

That, at least, is how many academics see it. But what of the governments that provide much of the funding? Examination of official statements and commentaries from OECD countries suggests that universities are attracting attention and criticism on some or all of the following grounds.

First, their teaching and research activities change too slowly in response to new economic and social priorities. The reasons for this are understood well enough. Universities exist to conserve as well as to advance knowledge. Higher status attaches to theoretical than to practical applied work. Disciplinary boundaries are slow to erode, "new maps of learning" hard to institutionalise. Current government priorities must not be immune to the exercise of the university's critical function. Yet official anxiety remains that failure to mobilise academic effort to overcome pressing current problems may weaken long-term public and political support for the universities and exacerbate their current difficulties.

Universities make large and, especially in some research fields, increasing claims on public expenditure. To evaluate these and to ensure maximum social benefit from the work done is a complex and time-consuming business. Given the readiness with which university scientists, when faced with restrictions on spending, appeal to a public interest that claims to transcend official interpretations of institutional or system needs, such evaluation and rationalisation can be politically costly.

Universities are governed in ways inimical to the forms of accountability increasingly required by open, democratic societies characterised by a high level of single-interest political activity. Where, *de jure* or *de facto*, staff are hired and employed by the institutions in which they work, the transfers and terminations that may be needed to secure concentration of effort and to staff new subjects and specialisms are difficult to negotiate and implement. There is no guarantee that funds made available to facilitate early retirement will be used in ways that serve overall academic and national interests, rather than those of individual management and professional associations. "Bottom-up" modes of governance, whilst they reflect the disciplinary basis of a university's rationale, inhibit strong central leadership such as contemporary conditions increasingly require as a condition for adaptability and even institutional survival.

There are dissatisfactions about the content and organisation of the undergraduate curriculum. Especially in some European countries, courses are too long and have low success rates. Elsewhere, academics tend to impose their own highly specialised interests on the shape of the undergraduate curriculum, with consequences that extend down into the upper forms of the secondary school and even beyond. Too much stress is still placed on the production of future generations of academic and research staff, teachers in the humanities and social sciences, civil servants and other public service functionaries, too little on the development of entrepreneurs and risk-takers.

Post-graduate advanced study and individual research programmes for higher degrees share many of the weaknesses of undergraduate work. They are too long, drop-out rates are high, failure frequent. The traditional doctorate is still geared to the needs of the academic profession itself. Shorter courses at post-graduate level designed for updating purposes embody theoretical conceptions of professional education, and give inadequate attention to the marriage of theory and practice and the development of individual competence and capability. Repetition and non-completion are still major problems in some OECD countries. In Spain, for example, an official survey published in 1985 showed that three-quarters of Spanish undergraduates take more than five years to finish their degrees, and the average is seven or eight years. Only 40 per cent of students enrolling for technical or scientific subjects reach the third and final part of the degree course. A study by the Spanish Centre for Education Statistics showed that only 22 students graduate out of every hundred who begin degree courses (Evans, 1985*a*). In the United Kingdom, there has been anxiety about the proportions of post-graduates with studentships in the social sciences who complete their research and present their theses for examination, and a national study has been instituted.

The jealously guarded autonomy of universities and the tradition of academic tenure protect staff hired in the expansive 1960s and early 1970s some of whom are now either burned out as far as significant research contributions are concerned, or who compare unfavourably with the larger numbers of high-quality aspirants now available to fill a diminished number of academic positions. There are doubts as to whether, left to themselves, universities would use such limited money as is available to finance "new-blood appointments" in ways that would coincide with official ordering of priorities.

Governments have been keen to bring universities closer to industry and commerce, in the hope and expectation that effective technology transfer will enhance competitiveness, that statements of employment requirements will be more clearly articulated on the one side

and acted upon on the other, and that there will be an increased flow of private funds in support of university activities. Not all universities have responded. Anxieties about the effects of commercial imperatives on academic values obtain a ready audience and on this view impede desirable developments both nationally and locally.

Confronting the Future

Whether we regard the university as an endangered institution depends upon our beliefs about its central purposes and values and our assessment of how these are affected by changes in society, policy and economy. Differences in the organisation, finance and administration of universities, and in the expectations that faculty, students, employers and public have of them, mean that decisions and trends that in one country would be regarded as endangering university futures would in others occasion little comment. The concerns of governments are affected not only by economic, cultural and historical contexts but by political priorities. And as we have seen, even within national frontiers, differentiation of university systems means that what endangers one institution may strengthen others. With all these caveats it is still possible to identify a number of current or incipient dangers common to all or a significant number of OECD countries.

Failure of policies concerning the role of universities within much expanded overall provision of post-secondary education

In some European countries universities continue to offer a course structure and curriculum little different from the days when a much smaller proportion of the population enjoyed any form of post-secondary educational opportunity. Particularly in Europe, the "open sector" faculties of humanities, social sciences and law have expanded much more quickly than those in applied science, technology and professional subjects. Staff/student ratios have deteriorated. Non-completion and failure rates are high, courses are longer than elsewhere, but quality anxieties remain. In some cases academic staff claim they are swamped by increased numbers, and cannot fulfil their research obligations. The employment prospects of "first-cycle" diplomas are poor. Even when agreement exists that reforms to redress the structure and balance of studies and to protect standards of university work are needed, assent to specific proposals is hard to attain, and new legislation difficult to implement.

In countries where a substantial proportion of students in higher education are enrolled in institutions that legally, financially and administratively constitute a separate system from the universities, questions arise about co-ordination, parity of treatment, rationalisation of effort and the permeability of the university/non-university boundary. In the case of the United Kingdom, for example, the aspirations of some polytechnics for university status are matched by suggestions that money might be saved and the quality of university work protected if some universities were designated as polytechnics.

Lack of interest in the overall purpose and design of the undergraduate curriculum

The powerful and well organised disciplinary interest clusters of academe are not matched by strong groupings concerned with overall curriculum design. Criticisms of the existing undergraduate curriculum vary from system to system. Some degree courses are too specialised and have undesirable backwash effects on what is taught in secondary schools. The educational value of many general degree courses is vitiated by a plethora of electives. The logical structure of first-, second- and third-cycle courses is belied by the realities of

abandonment and lack of systematic progression. Broad-based discussions of the undergraduate curriculum, and associated staff development, are low-status and somewhat suspect activities for many academics. Governments now regularly visit what was for some the secret garden of the school and college curriculum, but university course and programme content remains forbidden fruit. There is need to sustain the capacity of universities to attract high-quality students to programmes of a kind that may not confer a short-run employment advantage, but which provide a sound and flexible preparation for subsequent specific training and retraining, whether in the context of declining numbers and greater student consumerism, or of further expansion. This calls for more systematic attention to be given to the shape and content of the undergraduate curriculum, with special reference to the kinds of transferable skills and productive and responsible dispositions that contemporary conditions increasingly demand.

The role of the university in basic and strategic research is endangered by institutional diversification, the increasing costs of some lines of work, shortage of resources, and a trend towards establishing self-standing research organisations unimpeded by traditional academic job specifications and tenure. Responses include greater selectivity on the part of governments and funding bodies in the allocation of research resources and enhanced interest by universities in securing research and development contracts from private sources. Selectivity may deprive some universities of a meaningful research role, unless the concept of what constitutes valid research can be extended to include synthesis and dissemination of a kind increasingly demanded by information-rich but knowledge-hungry societies. Growing dependence on short-term contracts weakens the independence of universities and their critical role in society and distorts patterns of collegial governance.

The universalistic orientations characteristic of elite systems have survived but often serve to weaken regional ties and undermine local political support for universities. The reconciliation of national and international roles on the one hand with local and regional contributions on the other has been shown to be possible, but requires attention of a kind that it has not yet everywhere received.

Rapid expansion followed by stagnation and decline has serious implications for the academic profession, endangering quality, responsiveness, morale and conditions of service. Many "new blood" schemes have been responsive to short-term external priorities, but are palliative rather than structural in their effects. There are anxieties that reduced inflows to the academic profession during periods of enrolment stagnation or contraction will have serious consequences when the upturn arrives in the 1990s. A sudden increase in staff recruitment could reproduce in the early years of the next century the problem of distorted age profiles that currently bedevils universities. Civil service status and lifetime tenure are important protections for academic freedom, but of decreasing relevance in the face of the uncertainties of short-term funding and consumer demand and the existence of general employment legislation. Reforms are now called for that protect the independence of the university, improve job opportunities and recruitment, offer relevant incentives for effort and sustain high morale and productivity.

Dependence on government support at a time of economic recession and increased competition for resources from other sectors has fuelled centralist interventions and endangered the independence and range of initiatives of university systems. Efficiency, effectiveness and value for money feature prominently on official agendas. The criteria and mechanisms that governments and funding agencies employ to judge the work of universities are not always consistent with strengthening the intrinsically "bottom up" character of academic quality control. "Performance indicators" are only likely to be useful if employed in ways that enlist academic support for worthwhile and agreed objectives, and do not absorb large quantities of time and effort that might be usefully devoted to teaching and research. In particular, narrow

conceptions of university priorities – survivalism, short-term market response – may endanger the kinds of educational leadership that university heads and senior staff must provide if the weaknesses of existing curricula and academic organisation are to be overcome and the longer-term benefits of universities to society realised.

Such an enumeration does not exhaust ways in which universities in OECD countries may be endangered by current trends, but it may provide some useful headings under which the evidence provided by the country statements and other recent literature can be appraised, and an agenda devised for future policy thinking and analytical work in this area.

Conclusion

A central question in this report has been about the extent to which some of the essential functions of universities are being endangered. Different readers, according to their beliefs about the role and functions of universities, will come to different conclusions about the answers suggested by the evidence provided by the country statements and the discussion in the preceding sections. In terms of institutional survival, although individual universities may in the face of demographic decline and financial stringency have to suffer severe contraction in the scale and scope of their activities, and some may even close, the work of universities as such is too valuable in the life of the modern state and economy to be seriously at risk. There are already signs in some places that despite smaller numbers of secondary school-leavers and curbs on state spending, the university may take on new tasks and responsibilities in societies increasingly dependent upon adding to and synthesising knowledge and on an appropriately educated workforce.

The main dangers are not so much institutional extinction as failure to balance clarity and control of missions and objectives on the one hand with, on the other, freedom to develop new purposes and activities; failure to promote and give status to high-level discussion about wholes – the undergraduate curriculum, the structure of the academic profession – rather than parts – physics and classics and next year's pay rise; failure to recognise that too much emphasis on new forms of support – contract research arrangements with private industry, highly specific government grants – create dependencies that may prejudice the essential critical role of the university; failure to reconcile the active leadership and effective administration needed in turbulent times with the intrinsically "bottom up" character of university governance, the unpredictability of discovery, the mysterious serendipity by which knowledge and understanding advance. Policy-makers, administrators and academics have a shared responsibility to recognise and counter such risks to the future of the university.

Chapter 11

ISSUES FOR POLICY

CONCLUDING REMARKS BY THE OECD SECRETARIAT

This chapter brings together the main findings from this report, together with those of its accompanying volume on Post-graduate Education, so as to highlight the principal policy issues which emerge as they relate to the institutions themselves and to the concerns of central planning bodies and/or governments. Whereas it is useful to make this distinction from the outset, it is important to underline that there is more identity between the interests of the two sides than is often admitted in the current public debate.

The Changed Context

Until recently, in spite of hierarchies of perceived or real differences of status and quality, universities operated within a shared pattern of definitions and functions understood and accepted both inside and outside the academic world:

- Universities provided advanced instruction to full-time students newly graduated from selective secondary schools. Courses of study were primarily in the arts and sciences and emphasized intellectual development, character formation, acculturation and socialisation – qualities deemed essential for the grooming of future leadership. Specific career preparation was limited to the academic professions and the traditional liberal professions, among which medicine and law prevailed. Most often universities did not include the training for what were considered to be lower-level occupations, such as management, human services and most technological fields.
- Although the degree of emphasis on research in universities varied from country to country, these institutions were universally viewed as being communities of scholars pursuing new knowledge in a disinterested, non-directed fashion, and as having a primary responsibility for the preservation and transmission of knowledge and culture.
- On the whole, universities remained substantially isolated from other segments of society. This isolation was, in part, deliberate so as to reinforce the role of the university as a locus of critical inquiry and freedom of debate.

During the past thirty years, there has been *substantial expansion of the demands and expectations* placed on the system of higher education in all Member countries, with a number of new dimensions added to the traditional *instructional* as well as *scholarly* and *professional* functions of these systems. This has resulted from the cumulative effect of a much larger and varied student population, the rapid pace of scientific and technological

development, the enhanced importance of innovation and knowledge in modern societies and the economic importance of a skilled labour force.

To a varying extent and using different approaches, all OECD countries responded to increased enrolment pressures by enlarging their system of higher education. The principal qualitative difference among countries consisted of the extent to which new categories of tertiary institutions – especially short-cycle institutions – were created to accommodate some of the new demands.

All OECD countries increased, to a greater or lesser extent, the size and/or number of universities. In some instances, the initial plan for expansion of higher education called for the creation of new categories of institutions which later became universities, at least in name. This upward drift reflected the pressures of the traditional academic value system, the lack of parity of esteem among the range of new missions and the influence of rising credentialism.

In most cases, the increase in the number and size of universities occurred without any thorough examination of possible changes in the mission of the expanded university sector. As a result, most universities, new or old, found themselves under pressure to undertake a substantially broader set of tasks, but without clear understanding, acceptance or even internal consensus as to ways of fulfilling this expanded role. The mismatch between self-definition and external expectations has been particularly felt in the newly-created universities which did not have the benefit of prior prestige and self-confidence.

These difficulties have recently been compounded by stagnation or reductions in the public resources allocated to higher education, coupled with public demands for greater accountability and for greater relevance of course offerings. Although the future level of financial support of higher education cannot be easily foreseen, the prevailing position among public authorities is that the *structural reforms* that are needed in response to changing external demands cannot involve the creation of substantial numbers of new institutions. Instead, *the existing system should be encouraged and helped to adapt*.

In all Member countries universities constitute the major, if not the leading component of higher education systems and are thus expected not only to respond to but also to anticipate external pressures and expectations. They have to do this without neglecting most of their traditional tasks which continue to be essential to their very nature and societal mission. The challenge, therefore, is to *combine continuity with change*, to expand and to enrich the role and functions of universities while maintaining their contribution to the traditional objectives. In particular, universities need to retain their uniqueness in terms of their commitment to the disinterested pursuit of knowledge, the spirit of free inquiry and the preservation and transmission of a society's cultural heritage.

The Changing Instructional Functions

In all OECD countries, not only the number but also the characteristics of *young people* enrolled in higher education has changed appreciably. Expansion brought about the participation of students with more diverse social backgrounds, different motivations and a wider range of educational qualifications. Inevitably, this led, overall, to:

- A greater proportion of students viewing higher education as a means of social mobility, and hence greater demand for explicitly career-oriented courses of study;
- A greater heterogeneity of background and of quality of preparation at time of entry into higher education;
- A greater diversity of programmes and of organisational arrangements designed to

facilitate different forms of attendance, partly in an attempt to reconcile the need for quality with the demands of equity.

In addition to the changing nature of the student body, other circumstances also increase the demand for *career-oriented courses of study* at both the first degree and the post-graduate level:

- The nature of the labour market in our "expert society" has caused both governments and employers in most countries to place a premium on technical expertise and occupational competence as an educational outcome, as well as on matching availability of programmes to anticipated employment needs. This pressure has been intensified by the fact that advanced degrees are now expected for many middle-level positions which in the past required only a school-leaving certificate.
- A recent, countervailing trend is being triggered by increasing criticism of narrow specialisation, not only because of its rapid obsolescence but also because of its inability to deal with complex realities and rapid change. University education in particular must maintain a substantial emphasis on critical inquiry and breadth.
- The manpower needs of the "expert society" have also led in some countries to pressure for shortened first degrees and for a more responsive post-graduate degree structure.

All countries, to a greater or lesser extent, are witnessing an increase in *adult and part-time students* due to several factors:

- The number of occupations requiring a tertiary degree is growing; and there are also new educational demands arising from the changing status of women and the assimilation of minorities and immigrants (growing demand for "second chance" degree programmes).
- The accelerating obsolescence of knowledge and information due to changes in job content as well as categories of jobs has resulted in a growing need for recurrent formal instruction for the maintenance and adaptation of competence.
- Economic necessity, opportunity costs as well as psychological and sociological factors are causing in many countries an increasingly delayed and/or intermittent pattern of attendance as well as more part-time study by young people.

Needs for new patterns, as well as different content, are also arising at the *post-graduate level*:

- In a growing number of occupations and professions, there is a need for an intermediate post-graduate degree in between the first degree and the doctorate.
- Where such degrees exist – such as, e.g. the terminal master's degree in the United States – the majority of students are employed adults enrolling on a part-time basis, an indication that part-time post-graduate study is becoming the norm.
- There exists, as well, an increasing interest on the part of individuals employed in both public and private sectors to pursue policy- and practice-oriented doctoral degrees different from those preparing for an academic career.
- Demand for non-degree post-graduate study, such as specialisation courses and "upgrading study", is also increasing. A growing amount of such instruction is sponsored and funded by employers for their employees, or by unions and professional associations for their members. In addition, in many countries a number of licensed and registered professions now make such study a condition for continuing practice.
- Overall, there exists a pervasive sense of confusion and uncertainty with regard to the structure and the content of post-graduate education. The diversity of provision has not kept pace with the increasingly differentiated relations between knowledge and society.

The Changing Scholarly Functions

Traditional basic research, with potential outcomes that are both long range and unpredictable, continues to be an important need of society. In the majority of OECD countries it is the function of universities which receives the greatest emphasis and the one that is viewed as their most distinctive feature. But contemporary conditions raise serious questions as to the degree of involvement of different universities in this type of research and the extent to which for all of them their research efforts and performance should indeed be the best guide for the assessment of their standing and prestige:

- Research has not always been a distinctive feature of all universities.
- Only a portion of the university professoriate are active in research.
- Rising costs of research, particularly, but not only, in the physical and biological sciences, create growing pressure to concentrate limited funds in a few institutions even more than is the case at the moment.
- There exist growing needs for scholarly and professional activities other than basic research.

Of these new needs, that for *applied research and development*, is particularly important. It is triggered by a number of factors:

- The time-gap between basic research and its application has in many fields become so short as to reduce or eliminate the distinction.
- This is further enhanced by the fact that increasingly technology drives science through the development of new instrumentation.
- The economic vitality of modern, industrialised societies depends on a continuing flow of technical innovation and advance, creating substantial demand for close relationships between research, development and application.

There exists a corresponding need for effective *technology transfer and knowledge diffusion*:

- The full economic benefit of innovation occurs only once this has been absorbed by all components of the manufacturing and service sectors;
- The pertinent political and managerial decisions require a growing amount of technical assistance, technology assessment and policy analysis, made available to managers and policy-makers in both the public and private sectors.

The growing complexity and interrelationship of contemporary political, economic and social issues, together with the profusion of information and glut of data, place an ever greater premium on the *aggregation, synthesis and interpretation* of information. Societies seem to be drowning in information, often mistaken for knowledge.

Implications for Policy

a) What missions for which universities?

The expanded societal demands on the instructional and scholarly functions of higher education reflect also basic changes in the very nature of knowledge. Indeed, it could be safely asserted that some of the most significant changes in higher education have been those resulting from the major developments that have taken place over recent decades in the sciences and other fields of study – ranging from biology, technology to law. Changing concepts of knowledge, the breakdown of traditional disciplines, the proliferation of specialisa-

tions, the emergence of new "maps of knowledge" require a response from all higher education institutions which represent, in Burton Clark's definition, "the social structures for the control of advanced knowledge and techniques" (1983).

Foremost among these institutions, of course, are the universities. And when the new external demands and expectations placed on higher education (summarised in the preceding two sections), are added to pressures resulting from changes in knowledge, the fundamental policy question which arises is: *to what extent should some or all of them become explicit functions of some or all the universities*?

In the past, it has been customary to draw a sharp dividing line between two clusters of functions of higher education systems: the provision of high-level initial training for the professions and the production and dissemination of knowledge on the one hand, and, on the other, the provision of a wide range of formal and less formal specialised programmes in response to a broad demand, including that of adults and non-traditional students. The first of these two groups of functions has generally been associated with the role of universities, the latter were mainly assigned to the non-university sector and other institutions or agencies outside the formal higher education system.

Such polarisation creates problems at two levels: at the *institutional level*, these problems are felt more acutely by those establishments that occupy an intermediary position between the elite universities and their equivalent, on the one side, and the professionally-oriented, short-cycle institutions, on the other. They have special difficulties in maintaining their competitive position and defining their identity and future role. At the *faculty level*, it is the "soft" disciplines – the social sciences and the humanities – which are particularly vulnerable, whose "usefulness" is increasingly contested and whose relevance to the longer-term needs of a technologically-based society tend to be easily, and unwisely, overlooked.

It is essential to stress that the new conditions and demands on higher education do not constitute new and distinct functions. They rather imply a broadening of the traditional definitions set within a *continuum of functions which cut across and break down the categorical distinctions of the past*. The range of this continuum in each Member country needs to be viewed within the global context of the entire system of advanced education, which should include the tertiary as well as the upper secondary sectors.

Within such a global view, it is the sector as a whole and not necessarily each single institution within it, that needs to be able to fill an appropriate range of requirements. Thus, universities need not be identical. Each can find its proper place along the continuum of university functions.

In such a situation the key question is how the nature and degree of institutional differentiation will be determined: will this be primarily subject to government decision (as has been the traditional approach in Europe) or will market forces and competition be allowed to play a greater role, as seems to be indicated by recent trends in some countries towards deregulation and greater encouragement of institutional initiatives. Whatever strategy is adopted, there will remain problems of academic drift towards one end of the continuum. These problems can be handled only if different definitions of quality performance and corresponding prestige are defined and can achieve legitimacy. An additional condition for the development of such a diversified system is that there exists a high degree of articulation, communication and co-operation both among sectors and within each sector, with substantial freedom of choice and mobility of students and, to some extent, also of faculty.

Detailed planning for such a degree of diversity is difficult and perhaps impossible, even in a highly-centralised system. This suggests therefore that governmental policies should focus on ensuring the necessary degree of flexibility, co-operation and movement across the system as a whole, while allowing individual institutions considerable autonomy to find their niche within the variegated whole.

b) Universities and government: different perspectives and shared interests

Just as there exists a pervasive similarity of new demands on the university sector in all OECD countries, they also face a similar set of policy issues. Central to these is the recognition of shared interests between governments and universities and the need to establish processes and mechanisms whereby these interests can be discussed and pursued as *joint rather than conflictual ventures*.

Underlying many of the discussions in this area is a basic dilemma: on the one hand, universities have by tradition been the institution in society which takes long-range views as well as one which exercises a critical function; both require a measure of *autonomy and detachment*. On the other hand, both the instructional and the scholarly functions of universities have become important elements of a country's more immediate social and economic policy, and as such have been receiving a larger share of a shrinking public purse. This inevitably calls for greater *government involvement* and for more *responsiveness and accountability* by the universities. The appropriate balance between the ability of a government to exercise appropriate control and the possibility for universities to retain a substantial degree of autonomy might best be achieved if governments relied more on exerting influence through incentives and targeted funding, rather than exercising control by means of line item budgets, programme review and approval procedures. The dilemmas faced are seen when considering some of the key topics in current higher education policy debates.

Access and equity. Although participation rates in universities, as well as in total higher education, have increased substantially in all Member countries, the current levels still vary considerably. Furthermore, in spite of a greater diversity in the social composition of the student body, university attendance of young people from the middle- and upper-income strata remains disproportionally high. In most Member countries, therefore, there continue to exist unanswered questions with regard to optimal participation rates of different groups. These require continuing attention lest current participation patterns and modes of access are frozen in perpetuity. Closer links and co-ordination with policies at the secondary level seem essential in this context.

Within this context, there may be need in some countries to look more closely at the balance between the use of public expenditures for across-the-board subsidies of university instruction, which some consider to be regressive, and the use of these resources for direct financial assistance of individuals.

The academic staff. The aim of broadening the instructional and scholarly functions of universities under far stronger constraints than in the past has serious implications for policies and practices concerning the recruitment, promotion and career prospects of different categories of teaching and research staff. Clearly these are, and will continue to be, a matter of central concern for universities and governments alike.

Both in scholarship and in teaching, faculties need to achieve a closer relationship between theory and practice. University faculty members must have some first-hand familiarity with professional practice if they are to be involved in the initial and the continuing education of professionals. They must also know more about the external world in order to be effective in the dissemination and application of new knowledge. An important step in this direction is to require some practical experience as a condition for university appointment, a pratice already followed by a number of polytechnics, *Fachhochschulen*, and other post-secondary technical institutions. Maintaining such practical experience may require recurrent periods of faculty secondment to industry and/or government, as well as the systematic use of practitioners as part-time faculty.

Appropriate policies facilitating systematic and periodic interchange of individuals between the academic world, government and the private sector can also have a major impact on the issue of mobility and "new blood". This problem is particularly acute at present due to

the current age structure of the professoriate, but it will continue to be endemic because innovation and change in society at large occur on a time scale much shorter than the professional life span of a faculty member. Hence policies which ensure periodic changes of venue and of perspective are important in order to maintain the competence of faculty both in their scholarly and their instructional roles. It is in this context that *academic tenure* has become a very serious and sensitive area of concern in higher education and research policies.

The emerging scholarly and instructional tasks, particularly those which involve universities in technology transfer, knowledge diffusion, and in the growing system of lifelong education for employees and professionals, will require much greater flexibility of faculty assignments and modes of compensation, as well as substantial changes in the current system of values and rewards. Involvement in other than the traditional university activities must be subject to equivalent rigour of evaluation, reward and esteem as are currently applied to basic research.

The increasing heterogeneity of the student body and the wide variety of instructional activities of contemporary universities give renewed urgency to the long-standing need to pay *more attention to teaching*, both in the training of faculty and in its value and reward system. In this context, it can be argued that neither the traditional doctorate with its emphasis on scholarship and research, nor the more specialised post-graduate courses, seem an adequate preparation for modern academic careers which in many respects can be considered as a new professional specialisation.

Academic governance and leadership. The changing role and function of universities affect, as well, their internal governance. Traditionally the university was viewed as a community of scholars governing itself on a collegial basis. Rectors, vice chancellors, presidents were *primi inter pares* rather than chief executives, elected by their peers for short terms of office. Administrative staff was kept to the minimum needed for day-to-day management and usually under the control and authority of the Faculty. Contemporary conditions and demands have resulted in significant changes in both these aspects of academic governance.

In the management of universities, there is increasing need for the exercise of leadership which takes appropriate initiatives and sets priorities and directions while maintaining a substantial element of collegiality and participatory decision-making. Although this issue would seem to be, in the first instance, an internal one within the academic sector, it is strongly affected by policies with regard to the mode of selection and length of term of the head of a university.

Universities and their external constituents. The delicate relationship between central or state governments and universities is further complicated by pressures on the latter to have stronger links with regional or community agencies, and in more recent years, also closer involvement with the private sector. In most circles this involvement is considered by now both desirable and inevitable. The vanishing time lag between research and its applications, the growing importance of effective technology transfer and knowledge diffusion, and the increasing need for lifelong recurrent education to maintain the competence of employees, all combine to bring about a close relationship of universities and its external constituencies. The nature of this relationship appears as an increasingly sensitive and controversial issue. Indeed, the trend towards a growing reliance on second-stream funding may help to relieve some of the traditional tensions due to the universities' exclusive reliance on governmental sources, including public research agencies. But such a development carries also the serious risk of opening the way to an excessive influence and control on the part of well-endowed powerful interest groups.

Relevance and responsiveness: pressures and limitations. Government, the private sector and the universities themselves generally recognise that, both in scholarship and in instruction, the responsiveness of universities to immediate needs must be kept within bounds.

In the first place, universities are the one knowledge-related societal mechanism with the responsibility to maintain a long-term perspective and to moderate short-term fluctuations. Secondly, limits have to be set on the expectations of what any one institution can accomplish. Thirdly, if universities are not to lose some of their essential qualities, it is reasonable to argue that they should be allowed, and even encouraged, to state their own views as to how they can best ensure their relevance and responsiveness to the wide range of external claims and societal requirements.

A central issue in the above context is the *curriculum*. Although the growth of size and participation rate in university enrolment inescapably require greater career orientation in university instruction, the recent past has shown time and again the danger of tying curricula too closely to immediate labour market needs that often change by the time individuals obtain their degrees. Government, employers and universities are thus forced to establish closer co-operation in order to identify long-term socio-economic trends and secular changes in employment patterns. The emphasis is on the development of sufficiently broad career-oriented programmes which are less vulnerable to short-term changes and which allow to strike a proper balance between excessive and rapidly obsolescent specialisation, on the one hand, and an extreme of abstraction too far removed from practical application, on the other.

Reasonable responsiveness to the career interests of students should not preclude maintaining a number of degree subjects of great intrinsic interest but with small demand. In addition, neither should universities foresake their responsibility for maintaining an emphasis on intellectual development, critical inquiry and cultural development.

However much universities expand their scholarly mission in response to current demands, the university sector as a whole must retain at all times an adequate base of undirected basic research. The outcomes and potential long- range uses of such work are inherently unpredictable, and universities are the only places engaged in this kind of preparation for the future.

Accountability and assessment. The existing size and importance of the university sector also triggers justified demands for increased accountability and assessment of quality. This raises important issues regarding what constitutes appropriate measures and criteria for the evaluation of university activities. These must reflect the broadened mission of universities.

With regard to the *instructional function* of universities, the criteria of excellence have in the past relied too much on the *selectivity* of admissions. In view of the need to include a more diverse clientele, alternative measures are needed, such as, e.g., the level of achievement at the time of graduation, or a "value-added" assessment of progress: alternatives which to a considerable extent are antithetical. This calls for greater attention to *what* should be assessed, *how* it is to be done, for *which* purposes and under *whose* responsibility.

With regard to the *scholarly function* of universities, the expanded mission described above requires criteria of success and quality which look more closely than in the past to the university's regional impact, its effectiveness in technology transfer and knowledge diffusion, and its responsiveness to local needs. Appropriate standards for these functions are not difficult to formulate.

The intensification of government interaction with universities through a variety of funding programmes, on the one hand, and a lengthening list of regulations, on the other, have contributed greatly to the growth of administrative staff. This has become a matter of considerable concern requiring joint attention by governments and university authorities.

Much public criticism of higher education generally, and of universities in particular, is directed at continuing labour intensity and the alleged lack of improvement in *efficiency and productivity*. To date, this sensitive subject has been approached primarily in an adversarial mode. It requires more thoughtful and closer collaboration among the partners concerned. In this respect, it seems important to pay greater attention to the singularity and distinctive

mission of the universities rather than trying to seek comparisons with other institutions or agencies which, whether or not they fulfil similar functions, do not have the same objectives and perspective. The complexity of assessing university performance becomes all the more evident when seen against the great expectations placed upon them by public authorities and their external constituents. Indeed, not only do they have to adapt and respond to current and future societal demands; they are also expected to play a leading role in preserving the traditions and cultural heritage of each nation as well as in actively contributing to shape future democratic societies.

APPENDIX

The preparation of this publication has been facilitated by the availability of detailed statements prepared by or on behalf of national authorities on the role and functions of universities in the following countries:

Australia
Belgium
Canada
Denmark
Federal Republic of Germany
Finland
France
Greece
Italy
Japan
The Netherlands
Norway
Portugal
Sweden
Switzerland
Turkey
United Kingdom
United States

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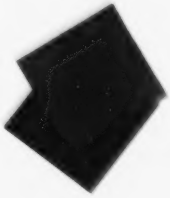
Never before have universities in OECD countries been under such severe scrutiny as they are now. This report reviews the problems and dilemmas confronting the academic world today. It clearly shows that if universities are to continue to make a vital contribution to post-industrialised societies, they will have to participate more actively in social and economic development while maintaining their strengths as centres of excellence.



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